AN HBJ PUBLICATION

JANUARY 1984 / $2.00

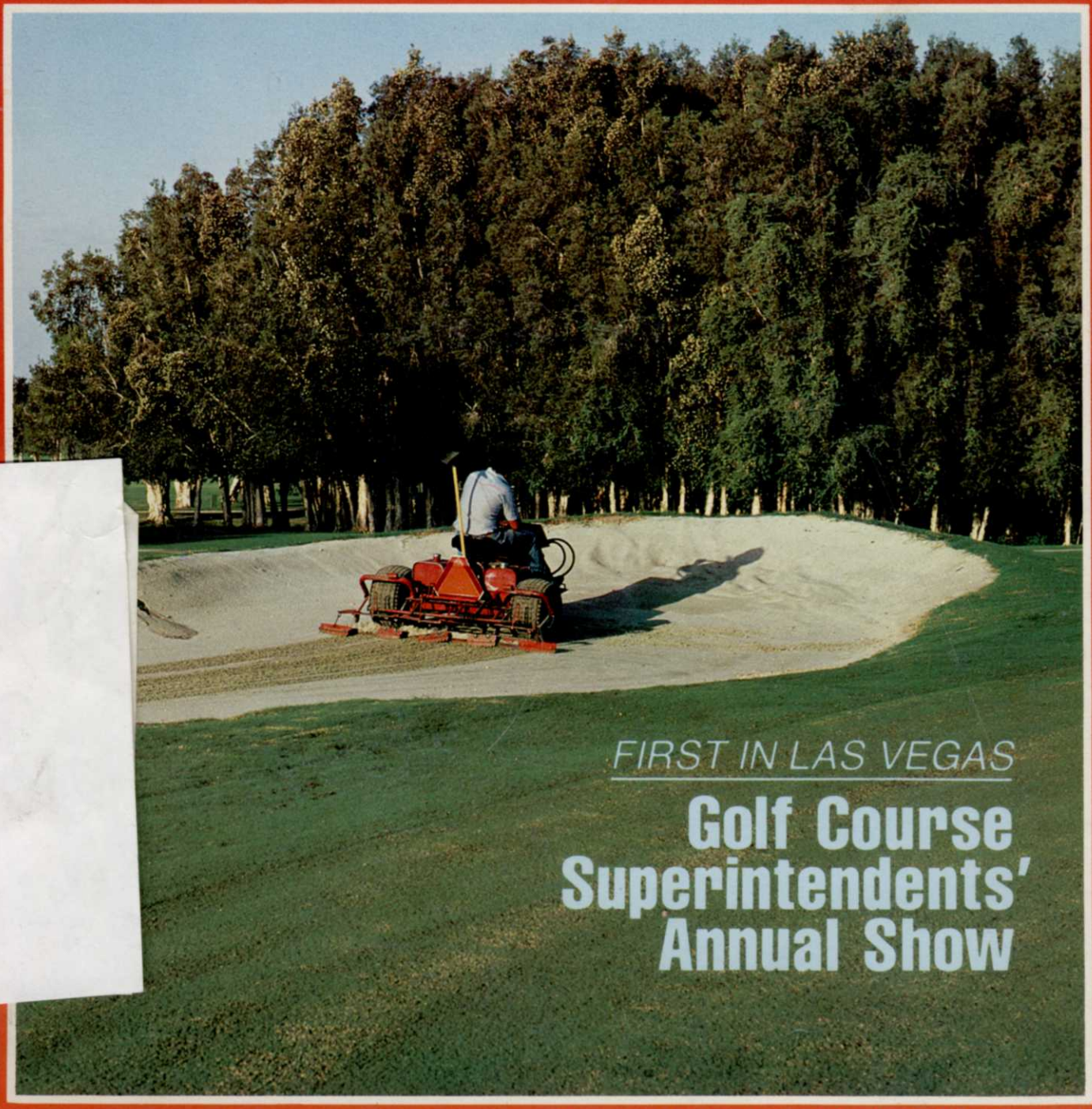
WEEDS TREES & TURF

The Magazine of Landscape and Golf Course Management Since 1962

The Growth of Multi-Course Management

WT&T Profiles Pinehurst, Illahe, and Milwaukee Country Club

USGA's Zontek on Renovation to Zoysia for Fairways



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3919

Circle No. 113 on Reader Inquiry Card

JANUARY 1984 VOLUME 23, NUMBER 1

WEEDS TREES & TURF

The Magazine of Landscape and Golf Course Management Since 1962

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Companies which operate or maintain more than one golf course are growing rapidly. More and more superintendents are responsible for a number of courses with superintendents under them. Weeds Trees & Turf talks to the super-superintendents and the owners of these companies.

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Labor lawyer Richard Lehr gives key points in dealing with unions where they exist and how to prevent their development where they have not organized

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Two Pinehurst superintendents give "day-in-the-life" accounts of managing six prestige courses with a $1.55 million budget.

50 Milwaukee CC Boasts of Tree and Student Programs

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60 Renovation of Illahe Changes Priorities for Super

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750 – *18 PTO hp, 20 engine hp*

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650 – *14.5 PTO hp, 17 engine hp*

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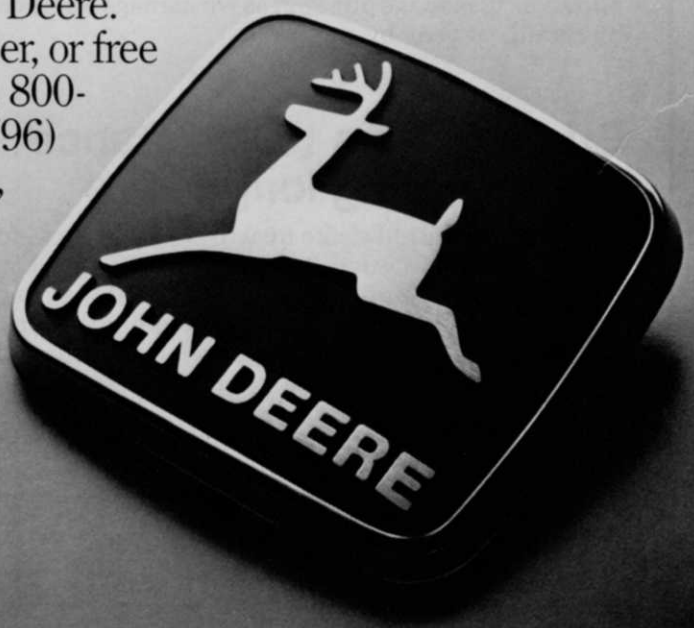

Circle No. 111 on Reader Inquiry Card

by **Bruce F. Shank,** executive editor

Large buyers want same deals as municipalities and military

Equipment and chemical manufacturers to the Green Industry have made very few exceptions over the years to the dealer/distributor network. One exception has been special prices and direct selling to government buyers. The bid process often required in selling to the government has made this exception necessary.

Now, managers of large landscaping and lawn care companies want equal consideration when they buy. Bruce Wilson, president of Environmental Care Inc. of Calabasas, CA, thinks manufacturers will have to give large buyers as much attention as the government in the future to get the business. "We make our own tree nursery bid for work our construction division does," says Wilson. "Competition is critical within our firm and the same is expected to apply to our suppliers. We buy as much as many government agencies during a year and should receive the same consideration."

American Golf leases equipment to speed growth, watch cash flow

American Golf Corp., Los Angeles, is adding golf courses monthly to its contract maintenance and operation service. This rapid expansion could easily get out of hand if management at AGC didn't insist each course support itself.

One of the secrets, says AGC regional superintendent Mike Heacock, is equipment leasing. In the past six months the company has leased more than $250,000 worth of equipment for its family of 40 golf courses nationwide.

"Our operating capital is the same as a daily fee course, greens fees and clubhouse income," Heacock told *Weeds Trees & Turf*. "In the long run it may be cheaper to buy all the equipment needed to maintain a course, but, when you're leasing the course, the long run is uncertain. Equipment leasing allows us to manage our debt as we manage our income, month-by-month or year-by-year."

Briggs keeps tough stance while settling long strike

The four-month-old strike by workers at Briggs and Stratton in Milwaukee was settled in November. The fact management stood firm on its offer to the union and that they kept one out of a dozen production lines open throughout the strike, is a message to workers at other U.S. engine manufacturers that competition against foreign companies is a greater threat to their jobs than robots and work assignments.

In the future, management will be forced to consider international competition equal to union concerns. The survival of the company must be of higher importance than wages or individual job security.

WT&T

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LAWN CARE SHOW

Pay attention now, or go out of business

A shift in pesticide legislation from the Federal to the state and local levels may put some lawn care companies out of business. The message of three speakers at the Professional Lawn Care Association of America 4th Annual Conference in Indianapolis, IN, was sobering, but it was honest and supported with facts.

The speakers may have seemed too direct for such a positive show as this year's PLCAA Show. A record number of exhibitors, a record number of people attending, and a sense "the market has arrived" balanced the somber words of the speakers. But, as a result, the show was a responsible one and not just a social event.

Not all sessions were "downers". They were historical, such as the speech by ChemLawn President Jack van Fossen. They were problem-solving, like talks on saving cancellations by incoming PLCAA President John Kenney, assuming contracts extend year after year by past president Marty Erbaugh and L.D. Anderson of Fertilawn, and how customers see lawn care businesses by researcher Carol Scott with Barrickman Advertising. They were also educational with many speakers from universities, lawn care companies, and manufacturing.

But, closest to the pocket book were three speeches. The first by Ray Russell, government relations director for Dow Chemical, illustrated shifts in pesticide regulation. Russell pointed out that efforts to protect pesticide users at the Federal level were missing more than 80,000 other governmental bodies capable of restricting pesticides. "Twenty-six states have controversial legislation regarding pesticides," Russell said. "Environmental groups are organizing on the local as well as the Federal level. We must shift or expand our efforts to protect ourselves."

ChemLawn President van Fossen *tells the past and the future of the company that helped professionalize the lawn care industry.*

Other shifts identified by Russell are from legislation to restrict use rather than products. Russell used the term chemical trespass to point out legal terminology developing to restrict pesticide use.

"Environmental groups are attacking potential registrations while EPA is processing them rather than waiting for them to reach the marketplace," Russell said. There is also a shift in attacking pesticides for urban use rather than agricultural use.

Recent proposed amendments to the Federal Insecticide Fungicide Rodenticide Act (FIFRA) would make it easier for opponents to get injunctions to stop pesticide use, increase record keeping and access to records, and require buffer zones and posting.

Lawn care businessmen can protect themselves by taking action now, Russell said, by getting their businesses in order, becoming better informed on local legislation, developing public affairs skills, and supporting pesticide applicator coalitions.

Ian Oppenheim, executive director of Rational Approach to Pesticides Inc., asked the lawn care businessmen whether they wanted to face growing legislation alone or as part of a unified

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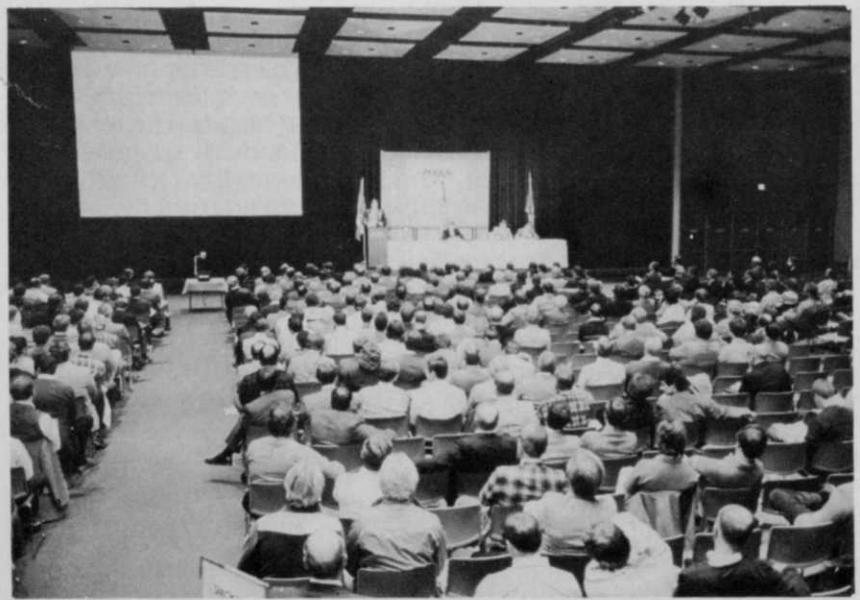

All seats were taken *during sessions at the PLCAA conference.*

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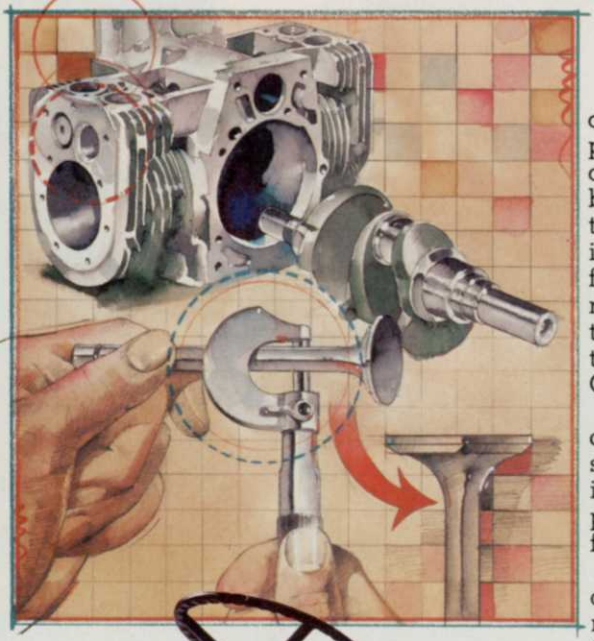

We tested it on a dynamometer to verify its power rating. We tore it down and inspected it part by part for durability. We tested it for noise. We tested it for vibration. We tested it for fuel economy. Then, we ran it hard for 1,000 hours to make sure it was up to going to work for our Groundsmaster 62. And you.

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GOLF UPDATE

Phillips succeeds Martin at NGF, first task is replacing Smith

Joe Phillips, an executive with Wilson Sporting Goods and past president of the National Golf Club Manufacturers, the Golf Ball Manufacturers, and the Golf Manufacturers & Distributors Association, is the new chairman of the National Golf Foundation board of directors. He lives in Glen Ellyn, IL.

Phillips replaces Jerry Martin from Hillerich & Bradsby. "One of the main things I'll focus on is making the proper selection of the next president," said Phillips. The title executive director was retired with Don Rossi last June. Frank Smith, who replaced Rossi, had the title of president. Smith vacated the position after a few months.

NCA reaches 1,000 milestone

The River Crest Country Club of Ft. Worth, TX, has become the 1,000th member club of the National Club Association, the national trade organization representing private golf, country, city, tennis and yacht clubs.

NCA President Harold B. Berman said the association was celebrating a new level of commitment on the part of private clubs in this country.

"As the National Club Association passes this membership milestone, we will rededicate our efforts to preserving the tradition and future of private clubs," said Berman. "It is apparent that this commitment has been taken to heart by private club representatives across the country."

Loyd is GCSAA communicator

Clay Loyd has been named director of communications for the Golf Course Superintendents Association of America.

Loyd, based at the Association's headquarters in Lawrence, KS, is responsible for the overall direction of the communications program, including managing production of the group's magazine, *Golf Course Management*, issuing news releases, acting as press liaison and other communications functions.

"I'm finding out rapidly what is meant by the phrase, 'world of golf," Loyd told *Weeds Trees & Turf*. "There is so much to learn, but it's fascinating."

Loyd received a degree in Journalism from the University of Missouri and lives in Topeka.

'Ole Bill' Lyons of Ohio dies

William 'Ole Bill' Lyons, innovator and staunch defender of the little golf course died in December following a heart attack. He was owner of Lyons Den Golf Course in Canal Fulton, OH. Lyons had just received the National Golf Foundation's Outstanding Service Award in November.

Lyons was in his 70's and had been a member of GCSAA for more than 35 years. Each year he hosted a cheese and wine party at the Midwest Turf Conference. He never retired and he never stopped exploring the impact of agronomics on the small golf course.

SHOW *from page 8*

Bob Felix *displays to PLCAA show delegates the proposed amendments to the current pesticide law.*

group. "Local groups can be more effective than national ones," said Oppenheim. "They can train better and generate defensive publications. But, local groups need to help each other and learn from each other, and the Pesticide Public Policy Foundation(3PF) is the answer.

Bob Felix, executive vice president of the National Arborist Association, spoke for 3PF. Holding up copies of the proposed amendments to FIFRA Felix warned that states aren't communicating with each other enough to defend lawn care and other pesticide uses. "We don't have to reinvent the wheel each time a local controversy arises," said Felix. "Anti-pesticide groups spend more than $200 million each year to influence legislation, what do we spend? 3PF is seeking to raise $500,000. It should be a line item in everyone's budget to donate to 3PF."

Next year's PLCAA Show will be in Tampa, FL. New PLCAA Executive Director Jim Brooks seems to know how to put on a show after his experience with the Golf Course Superintendents Association of America.

—*Bruce Shank*

EQUIPMENT

Toro doubles sales of snow equipment

The snow equipment business, which almost brought The Toro Company to its knees two years ago, is rebounding.

Recently released quarterly figures show Toro more than doubled its

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THE PRODUCTION MACHINE

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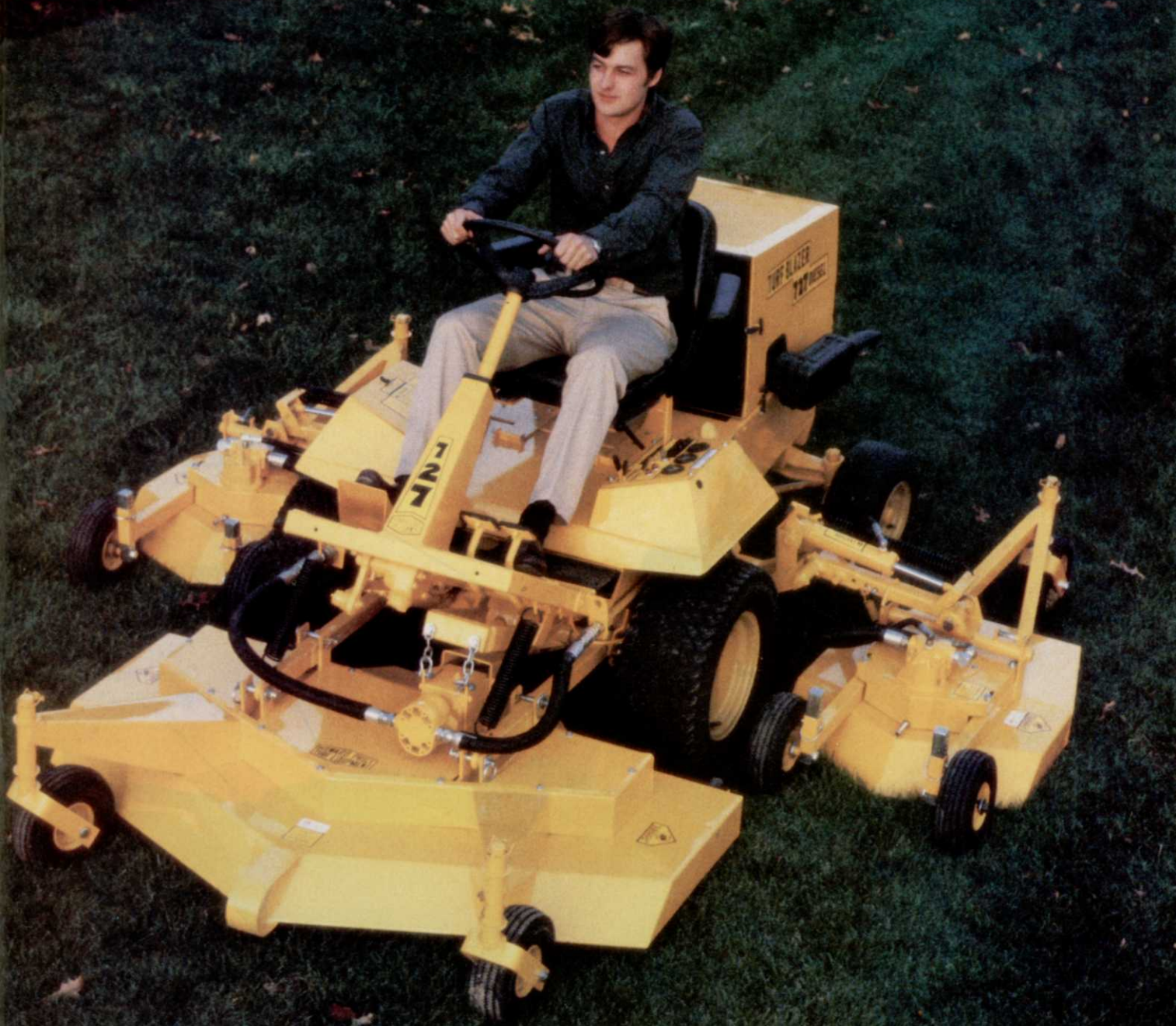

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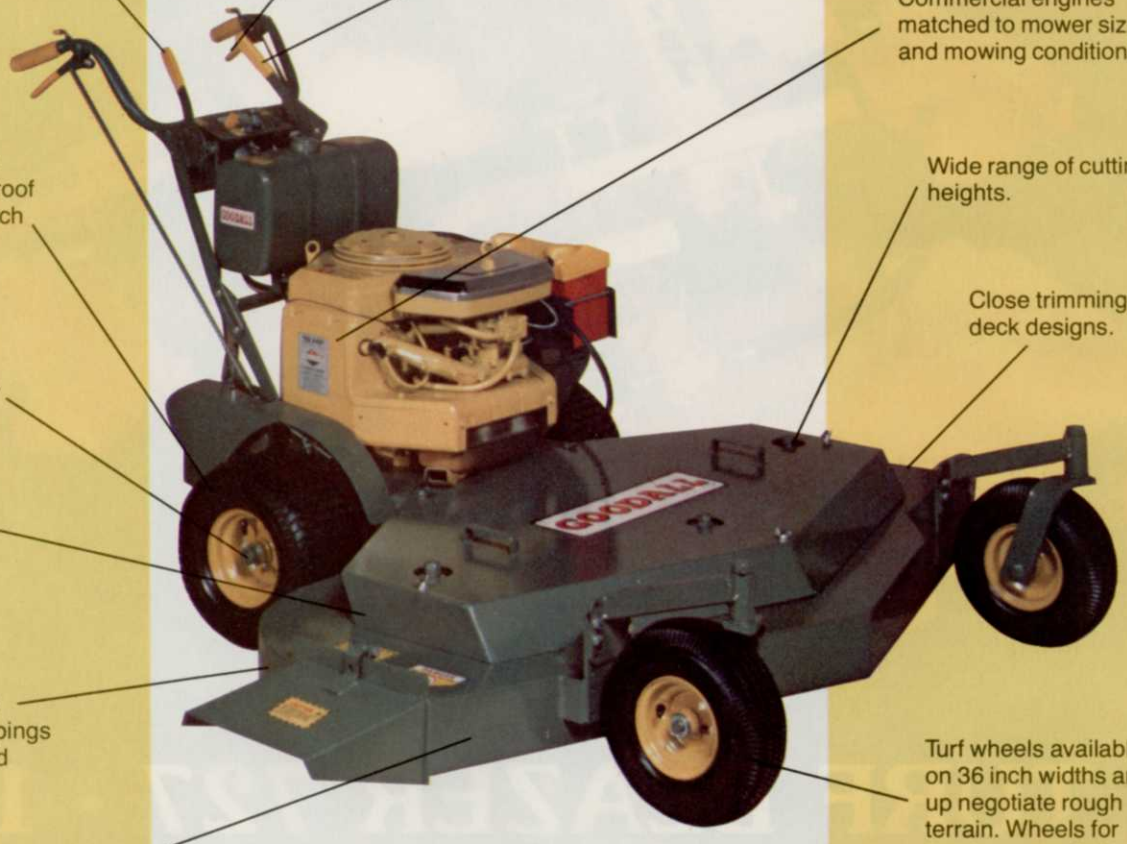

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LANDSCAPE UPDATE

Rocky contractors get ALCA help

The landscape management division of the Associated Landscape Contractors of America continued a popular service begun last year in Dallas by presenting some of the best business minds in the country for contractors in the Denver area.

The four-day management seminar in November attracted 275 contractors. The sessions were designed for middle and upper management of landscape contracting firms.

Sessions included computers, equipment, utilization, scheduling, management, and agronomics.

Certification test gets dry run

The professional image of the landscape contractor in California received a boost recently at the "dry run" of the new industry Certification Test. Members of the California Landscape Contractors Association culminated five years of work in October in Santa Rosa, site of the test.

The "dry run" took two full days of work by six examinees, six judges and the involvement of many other individuals and firms. They tested the format, execution of the procedures, organization, layout and setup of the examination.

Jerry Lambert of Lambert Associates, Santa Rosa, coordinator of the test, said, "Until now the standards for a landscape construction worker have been several summers digging trenches for pipe and holes for plants. With the fantastic success of the Dry Run field test, however, certification will be a reality for our industry in 1984, meaning that new standards for the skills and knowledge of its work force will be established."

The field test included 13 phases of the hands-on examination including: Plan Reading, 30 minutes; rototilling, 30 minutes, tractor-loading, 30 minutes; Irrigation Installation, one hour; grading and drainage, 30 minutes; Trenching, 30 minutes; Plant Layout, 30 minutes; Tree Planting and Staking, one hour; Install Controller and Wire Valves, one hour; Mow Strip, two hours; Brick on Sand Patio, two hours; Sand Box with Cap, two hours; and Seed and Sod, two hours.

LAF switches to ASLA staff

The Landscape Architectural Foundation, a non-profit research, educational, and scientific organization serving landscape architects, is now managed by the staff of the American Society of Landscape Architects. LAF decided not to renew the contract of Robert LaGasse after reassessing its management needs. At one time, ASLA and LAF were managed by LaGasse.

The headquarters for LAF will be the same as ASLA, 1733 Connecticut Ave., NW, Washington, D.C. 20009.

Mastick is new IPA president

Irene Mastick, Foliage Plant Systems, Pine Brook, NJ, has been elected president of the Interior Plantscape Association. Mastick was elected at the group's annual business meeting in October.

Stan Winchester is immediate past president of the group.

TORO *from page 12*

sales of snow equipment in the period ending October 28. As before the snowless years, snow equipment sales represented nearly half of Toro's sales.

Toro is still reporting a loss overall, but the loss has been reduced by two thirds, from $2.7 million in 1982 to 750,000 in 1983 for the quarter.

Other bright spots in Toro's sales were a doubling in consumer lawn equipment sales and nearly a 50 percent gain in irrigation sales. Professional turf equipment sales were down nearly a third and represented slightly more than ten percent of the company's sales.

New Lakeshore Headquarters

Last minute construction underway in November at the new headquarters for Lakeshore Equipment and Supply, in Rocky River, OH.

Rocky River was the first home of Lakeshore, when it was strictly a distributor to local golf courses and nurseries. Its territory has grown rapidly as has its staff and manufacturing.

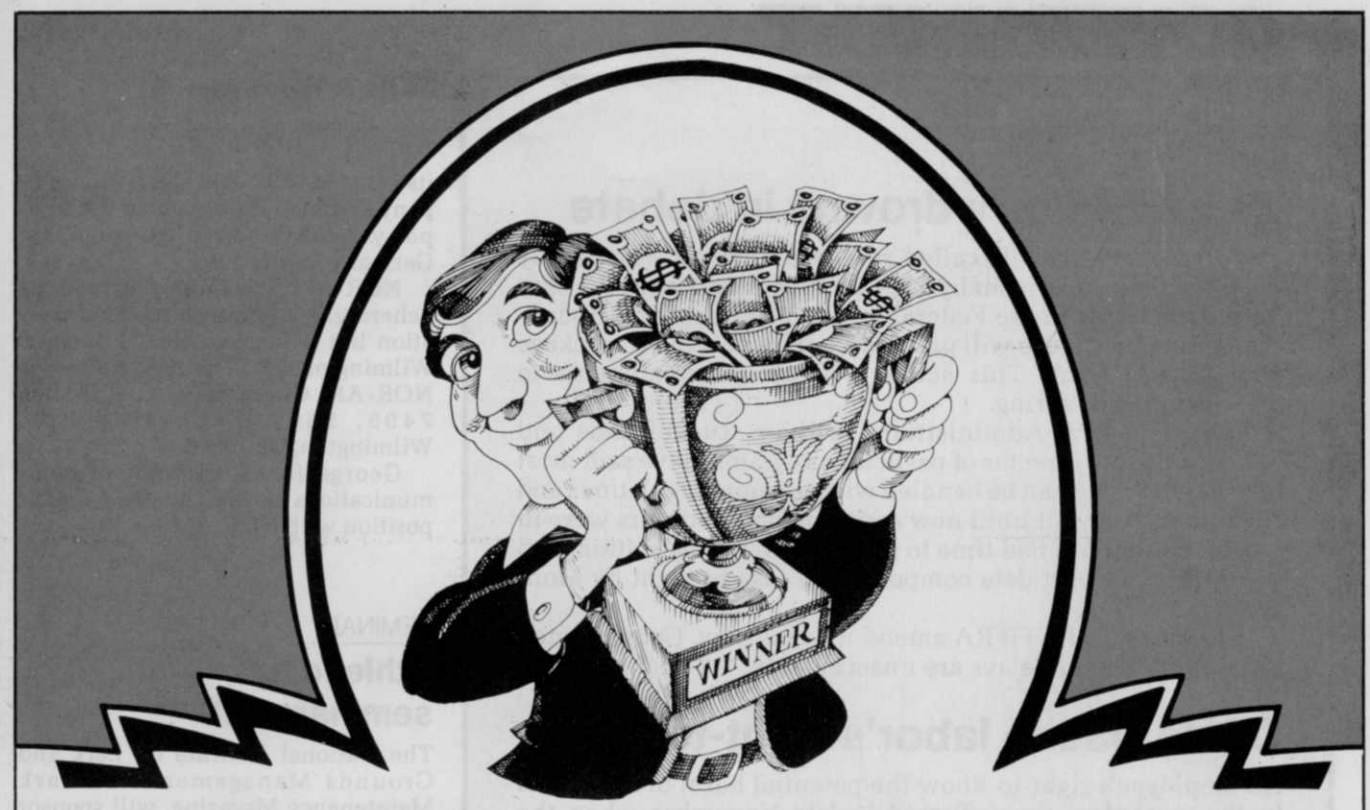
Today, it has manufacturing facilities in Florida and Wellington, OH, as well as a warehouse in Elyria, OH.

CHEMICALS

BFC becomes NOR-AM changes address

BFC Chemicals Inc., manufacturers of Powder Blue and Blue Chip fertilizer and Turcam insecticide, has changed

continued on page 20



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They all add up to *WEEDS TREES & TURF's* fabulous "Folding Green Sweepstakes"! Be sure and register at each participating booth during the GCSAA Show in Las Vegas January 29 - February 1. You could go home $250, $500, or even $1,000 richer!

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1. You must be a golf course superintendent registered at the show. This sweepstakes is not open to family members or exhibitors.

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3. Go to any listed booth, get an entry blank with complete rules/details, fill it out, and drop it in the ballot box.

4. Enter as often as you like, but only once at each booth.

5. Pick up your prize — if you're one of our lucky winners. Prizes will be mailed if winners are not present.

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UPDATE

Harper's Ferry drowns in debate

The Harper's Ferry bill, called an environmental want list by industry, was thrown out by a House subcommittee as the core for amendments to the Federal Insecticide Fungicide Rodenticide Act. The House will prepare a totally new bill to package changes in FIFRA. This action will delay amendments to FIFRA until this spring.

Both new EPA Administrator William Ruckelshaus and Edwin Johnson, director of pesticide programs, have said most changes to FIFRA can be handled without more regulations and the rest should wait until new assistant adminstrators were in place, the staff has had time to size up current legislation, and the Supreme Court data compensation case brought by Monsanto is settled.

The new goal for FIFRA amendments is May. Congressmen are stating further delays are unacceptable.

OSHA backs labor's right-to-know

An employee's right-to-know the potential harm of chemicals in the workplace was affirmed in late November when the Occupational Safety and Health Administration issued a new "hazardous communications rule". Seventeen states already had right-to-know legislation.

Companies are now required, under the new rule, to conduct educational programs about the hazards of chemicals they handle. The cost to industry of the new regulation is estimated at $600 million, mostly in manufacturing industries,

The rule requires release of trade secrets in emergency and need-to-know cases with chemicals.

EPA seeks end to Silvex hearings

The Environmental Protection Agency has asked all registrants of 2,4,5-T and Silvex to voluntarily end all uses without hearings in the wake of Dow Chemical Company's voluntary cancellation of registration in August. The agency also required each registrant to identify the source of the chemicals in a confidential statement.

Existing stocks of 2,4,5-T and Silvex will continue to be distributed and used according to the labels until depleted.

Union Carbide may join data suit

Monsanto may be joined by Union Carbide when a pivotal data compensation case goes before the Supreme Court this spring. Both companies have won U.S. District Court cases restricting use of their data by other companies for the purpose of gaining EPA registration.

Until Monsanto brought suit against Stauffer Chemical Co. and EPA for use of Monsanto's glyphosate lab data, EPA was allowing data used to support registrations to be used by competitors. Since the District Court's ruling, EPA has allowed registrations only for products supported completely by the applicant's own data or data used with permission of its developer. The law, FIFRA, is unclear on data compensation.

EPA says the Union Carbide suit should be tried together to avoid conflicting decisions.

NOR-AM *from page 16*

its name to NOR-AM Chemical Company as part of the buyout of the company by Schering AG of West Germany in July 1983.

NOR-AM, previously owned by Schering, is taking over the BFC operation but will move from Illinois to Wilmington, DE. The new address is NOR-AM Chemical Co., P.O. Box 7495, 3509 Silverside Rd., Wilmington, DE 19803.

George Jones, director of communications for BFC, retains a similar position with NOR-AM.

SEMINAR

Athletic turf seminars set

The National Institute on Park and Grounds Management and Park Maintenance Magazine, will sponsor two athletic turf management seminars, one in Anaheim, the other in Seattle.

Victor Gibeault, John Van Dam, Steven Cockerham, William Davis and Jewell Meyer will be the featured technical speakers at the conference March 19 and 20 at the Ramada Inn, Anaheim.

The second conference, scheduled for March 22 and 23 at the Edgewater Hotel, Seattle, will feature Dr. Roy Goss, Puyallup, WA.

Both programs will include specific information on varieties, fertilization and management, disease and pest control, irrigation and other problems found on heavily used athletic areas. Construction and renovation and case studies of areas and programs by professional managers will be on the program.

For more information, contact Athletic Turf, Box 1936, Appleton, WI 54913, (414) 733-2301. Registration is limited.

CORRECTION

In a story that appeared in the August issue, the companies that produce Rebel and Falcon turf-type tall fescues were misidentified. Rebel is a product of Lofts Seed, Inc., Bound Brook, NJ, and E.F. Burlingham & Sons of Forest Grove, OR, produce Falcon. We regret the error.

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Circle No. 147 on Reader Inquiry Card

Superintendents in the St. Louis area are finding zoysia may be the closest thing to a "wonder grass" for maintaining quality turf during the summer stress period.

The St. Louis Solution

by Stanley Zontek

In the past few years as Regional Director and traveling agronomist for the United States Golf Association Green Section, I have observed how golf course superintendents in the St. Louis metropolitan area have been dealing with one of their major problems - that of maintaining quality fairway golf turf during the summer stress period. This is a report on the solution many of the golf courses have found for good turf for their golfers now and perhaps, even more importantly, a high quality low maintenance golf turf for the future.

It is important to briefly define the transition zone and why it is so difficult to grow good, reliable quality turfgrass in this part of the country. Simply put, the transition zone is that part of the country where the Northern (cool-season) grasses are at the limit of their Southern adaptation and the Southern (warm season) grasses are at the limit of their Northern adaptation.

Grasswise, this is an "in-between" area where, due to weather patterns, some years the cool season grasses thrive on fairways and the next, due to a hotter and perhaps wetter weather pattern, the warm season grasses thrive. There never seems to be any compromise for the golf course superintendent caught in between Mother Nature and the golfers of the transition zone.

This leaves the golf course superintendent, his governing club structure and the everyday golfer in a dilemma.

What type of grass should be grown on fairways?

Cool season varieties such as the improved Kentucky bluegrasses and/or perennial ryegrasses can be overseeded into the existing fairway turf, but must be cut high (in the range of 1 to 1 1/4 inches) to survive the heat and humidity of the summer season.

In addition, a comprehensive

continued on page 26

Stanley J. Zontek is USGA Green Section North Central Director.

Strip-sodding *of zoysia on Forest Hills fairways was faster than plugging.*

Subdue. The most effective fungicide against Pythium blight and damping-off.

Pythium weather. High temperatures, high humidity and high anxiety. Once Pythium takes root, it can destroy turf within hours.

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Subdue fights Pythium blight and damping-off—as well as downy mildew (yellow tuft)—in two ways. On contact, Subdue destroys the fungi in the soil. Systemically, Subdue prevents disease from within grass plants. That's because Subdue is water soluble—easily absorbed by roots. So Pythium—and now, downy mildew—don't have a chance.

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Subdue's systemic action means longer, more effective residual protection. Fewer applications. Lower chemical costs. And savings in maintenance and labor. And Subdue's low application rate—1 to 2 fluid oz. per 1,000 sq. ft. for 10 to 21 days on established turf—makes Subdue the most cost-efficient protection you can buy.

Before Pythium weather strikes, subdue it. Use Subdue in a preventive maintenance control program. And get a good night's sleep.

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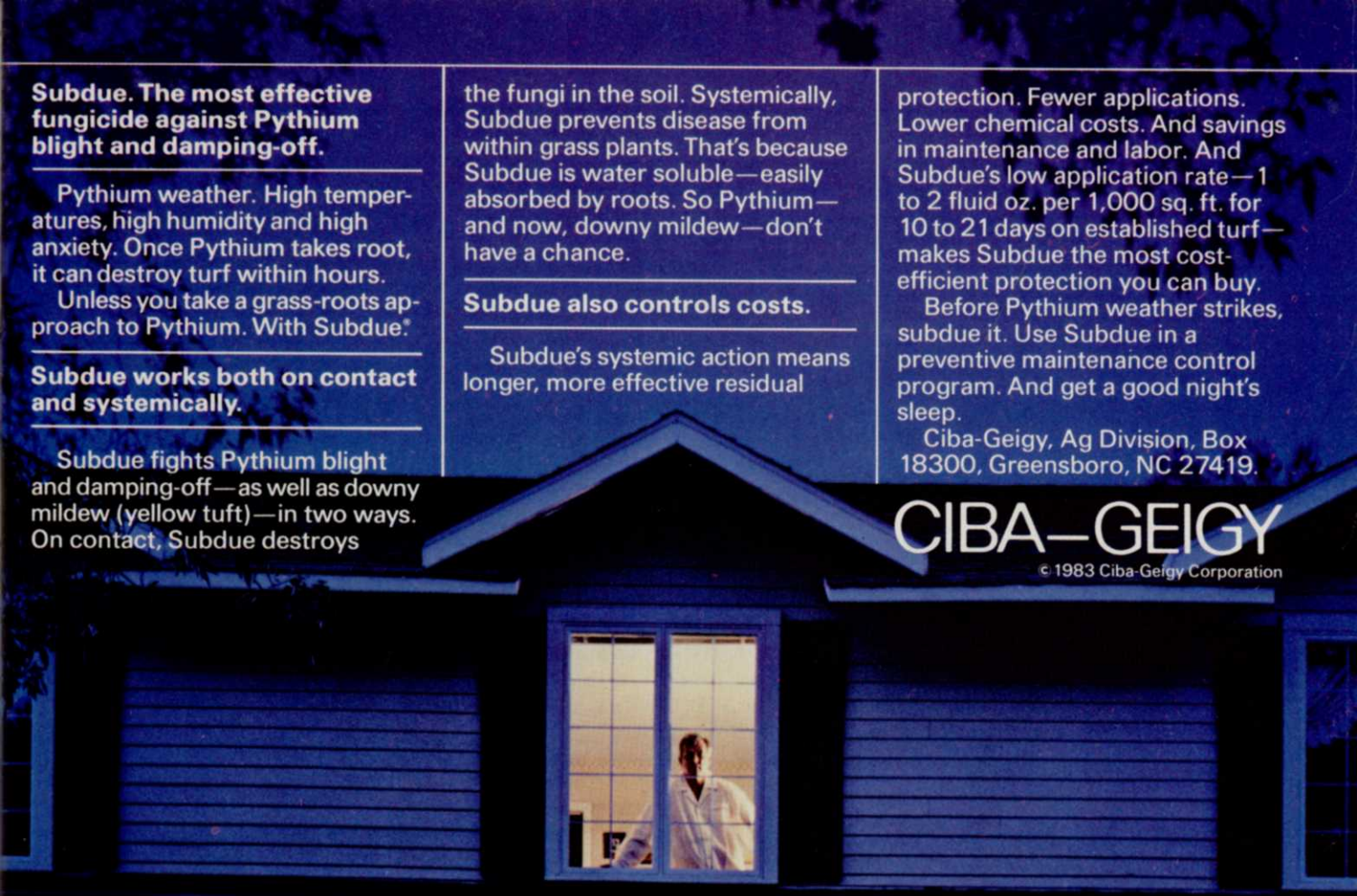

HOW TO AVOID SLEEPLESS NIGHTS DURING PYTHIUM WEATHER.

SUBDUE

Circle No. 207 on Reader Inquiry Card

ST. LOUIS SOLUTION

Choosing a zoysia establishment program

If a golf course decides to establish zoysia fairways, there are five basic programs that can be followed. The program that is finally chosen generally depends on how much money can be spent each year for the program, how much the golfers are to be inconvenienced and how quickly the course wants zoysia fairways. The basic programs are:

1 Plugging - This technique is the one most used by homeowners. On golf courses, it was used early on when the first fairways were being established to zoysia. It is still being used today. Small areas can be effectively plugged by hand and there are even commercial companies that will plug larger acreages on a contract basis. The plugs are usually two to four inches in diameter and are generally planted on approximately 12-inch centers.

2 Strip Sodding - This procedure is probably the most used today on golf courses that want to establish zoysia as quickly as possible. It basically involves removing four to 12 inch strips of existing turf and replacing it with a corresponding width of zoysia sod. The sod strips are planted on 12-16 inch centers. Obviously, the closer the rows are planted, the faster the zoysia will spread and vice-versa. By the nature of this program, establishment time for strip sodding is usually faster than plugging. You simply are putting more zoysia into an area.

Because of the amount of zoysia sod required to do an area using this technique, it is also the most expensive of the zoysia establishment programs. However, by planting a strip of sod into an area, it is one of the most sure and effective programs in use today. (Note: Both strip sodding and plugging can be done during the active growing period of the zoysia. There also have been reports of success using plantings of dormant zoysia strips and plugs).

3 Row Planting - This is a relatively new and somewhat still experimental technique of establishing zoysia fairways. So far, results to date on those courses that have tried this planting technique have been extremely encouraging. Hyde Park Golf and Country Club of Louisville, KY, have utilized this planting technique on all of its fairways. Basically, continuous rows on 12-inch centers four to five inches deep are cut into the soil using a row planting machine and shredded sprigs are inserted into the groove. The groove is mechanically closed by this same planting machine and the area is ready for post-plant care.

As far as can be determined now, for large acreages, this procedure promises to offer an alternative to the more traditional programs of plugging and strip sodding. This planting procedure is done on a contract basis.

4 Hydrostolonizing - Although initially used to establish zoysia on some fairways at Bellerive Country Club and Old Warson Country Club, this technique is now mostly used only on new golf courses being planted, on establishing zoysia nurseries or on limited areas that can be taken out of play and given time to establish. Zoysia sprigs are shredded, mixed with water (sometimes containing fertilizer) a binder and a mulch. This combination is sprayed onto bare soil followed by careful post-plant care especially as relates to irrigation. By the very nature of this program, it is quite disruptive to play and thus only now used on specific locations and in specific situations.

5 Seed - Through the efforts of Dr. Herbert Portz and his team at Southern Illinois University in Carbondale, IL, zoysia seed is now available. By a specially-developed process of ultra-violet light and soaking seed in a potassium or sodium hydroxide solution, formerly difficult to germinate zoysia grass seed will germinate.

The seed is fairly expensive and is somewhat slow to establish. The grass itself is fairly coarse once established, but this is the first time zoysia from seed is available to the industry. The zoysia seed that is now available has limited usage on fairways due to its coarseness and width of leaf and its slowness to establish with competition from other grasses. As it is now, using known establishment techniques, zoysia seed has not been very successfully overseeded into an existing turf.

It is important to remember that this is the first step towards a seeded variety of zoysia. Research on improved zoysia from seed is ongoing. For now, this coarser type of zoysia has potential usages as a rough grass, for bunker mounds, tee banks, etc. **WTT**

The Ditch Witch 350SX, a 35-HP-class lawn plow that's compact enough to go through a 36-inch gate.

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fungicide and herbicide program should also be followed to protect these grasses from summer diseases and weed infestations. When properly managed these grasses have good spring and fall color, density and growth, but the high summer cut along with some natural thinning of the grass is disliked by many golfers because the ball doesn't sit up as well.

On the other hand, do you rely on the warm season grasses like bermudagrass and zoysia which can be cut quite low and can provide excellent summer golf turf conditions when play is usually at its peak?

These grasses turn off-color in the fall, remain off color through the winter and only green up during mid-spring. While it is true that dormant zoysia and bermudagrass provide a fine playing surface, to the average golfer, there is still a stigma about playing golf on off-color tan/brown dormant turf especially when the golf course down the road having cool season grasses is green, lush and growing. The average golfer has a hard time understanding this.

Farther South, dormant bermudagrass is routinely overseeded with ryegrass blends for winter color, but in the transition zone regular fall overseeding of warm season grasses is not routinely practiced since ryegrass may compete with bermuda in the spring.

It has generally been accepted that fall renovation and overseeding of ryes for winter color injures the existing warm season turf when it is going dormant, potentially increasing winterkill problems.

Also, the overseeded cool season grasses, especially if they contain a high percentage of perennial rye, can be so persistent that next spring and summer they can favorably compete and persist with the warm season grasses particularly if the summer season is moderate. In some years, the overseeded ryes never leave.

What it really boils down to is a commitment to either warm season or cool season grasses with their associated advantages and disadvantages with little choice in between.

Some solutions

Zoysia grass has been around for a long time.

First introduced into this country in the late 1890s, it was propagated and some work done on it by the USGA Green Section and the USDA in the 1930s and 1940s. The real work on improved turf-type zoysias really didn't begin in this country until after World War II.

Then, in 1950, Dr. William Daniel of Purdue released the variety, "Midwest." This was followed in 1951 by the release of Z-52 or Meyer zoysia. Both releases were subspecies of *Zoysia japonica*. Today, by far the most used variety is Meyer.

Why zoysia? The answer is simple, yet complex.

First, it was observed by golf course superintendents primarily in the St. Louis area (along with a few other areas of Kansas and Illinois) that year in and year out the zoysia, if properly managed, seemed to tolerate and even thrive under the extremes of weather experienced in the transition zone. Zoysia exhibits outstanding winter hardiness (we know of zoysia being grown in Minneapolis) besides exhibiting excellent summer performance (it is a warm season grass). Further, once established, zoysia fairways exhibited outstanding playing characteristics and were very economical to maintain.

During the 1970s, superintendents saw that zoysia rarely experienced winterkill that was often a problem with bermudagrass in this part of the country. Zoysia seemed to green up relatively early in the spring and zoysia required far fewer fungicides, insecticides and herbicide applications. Zoysia required less water and fertilizer once it was established than cool season fairway grasses or even bermudagrass.

It provided outstanding playing turf preferred by the golfers during the peak of the summer golfing season when cool season grasses were at their weakest; the zoysia was so dense it literally crowded out and eliminated most goosegrass and crabgrass problems all

continued on page 90

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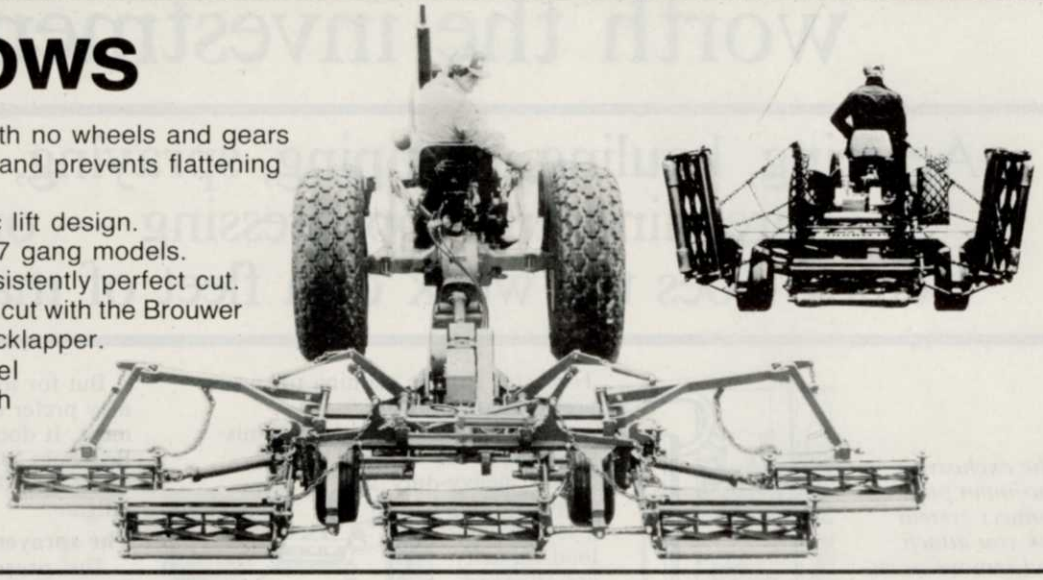

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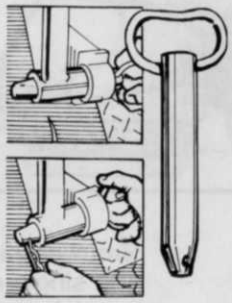
Circle No. 104 on Reader Inquiry Card

What makes the Cushman Turf-Care System worth the investment:

Aerating, hauling, dumping, spraying, seeding, spreading and top dressing — one vehicle does the work of a fleet of machines.

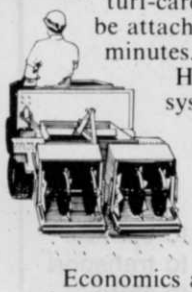


The exclusive Cushman pin disconnect system lets you attach and remove accessories in minutes.

The economics behind your decision to invest in the Cushman Turf-Care System are hard to argue with:

Here is a single vehicle that can do the work of a half dozen machines, at a fraction of the cost.

Here is a complete set of turf-care accessories that can be attached or removed in minutes.



Here is a groundskeeping system that's so simple, and so well-crafted, your maintenance and repair time will become practically nonexistent.

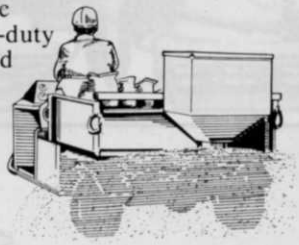
Economics aside, though, there is an even stronger reason to invest in the Cushman System.

Results.

The Turf-Truckster™.

Powered by a rugged 18 hp air-cooled engine, the Cushman Turf-Truckster has the stamina to survive years of constant use.

A 3-speed syncromesh transmission, hydraulic brakes, heavy-duty suspension and a ¾-ton payload capacity are all standard. And you can choose between a 3-wheel or 4-wheel design.



By itself, the Turf-Truckster is the industry's state-of-the-art work vehicle.

But team it up with any of the following accessories, and you have the makings of an efficient, economical turf-care system.

The aerators.

Because you have two types of turf to aerate, Cushman makes two aerator attachments for your Turf-Truckster.

The Greensaver® is ideal for greens and other delicate areas. Interchangeable aerating drums let you select the precise degree of aeration needed — ½″ cores for fast-growth seasons, ⅜″ cores for slow-growth months, and deep-slicing tines for summer hot spells.

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The dump boxes.

To haul fertilizer, dirt, sand and other supplies, choose our Short Box attachment. It handles 1500-lb. payloads, sits low to the ground for easy loading and can be hydraulically dumped right from the driver's seat.

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The corrosion-resistant hopper holds up to 300 pounds of material, and spreads it evenly across a swath up to 40 feet.

The top dresser.

Just 3 pins connect the Top Dresser to your Turf-Truckster chassis, and you're ready to top dress up to 220 feet per minute.

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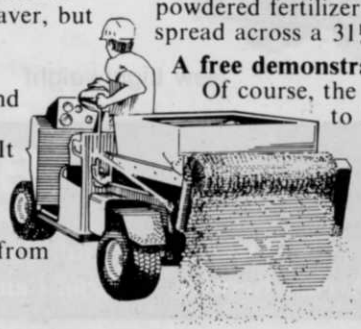

A free demonstration.

Of course, the best way for you to learn about the Cushman Turf-Care System is to see it in action. On your grounds. To do that, just call us toll-free: **1-800-228-4444.**

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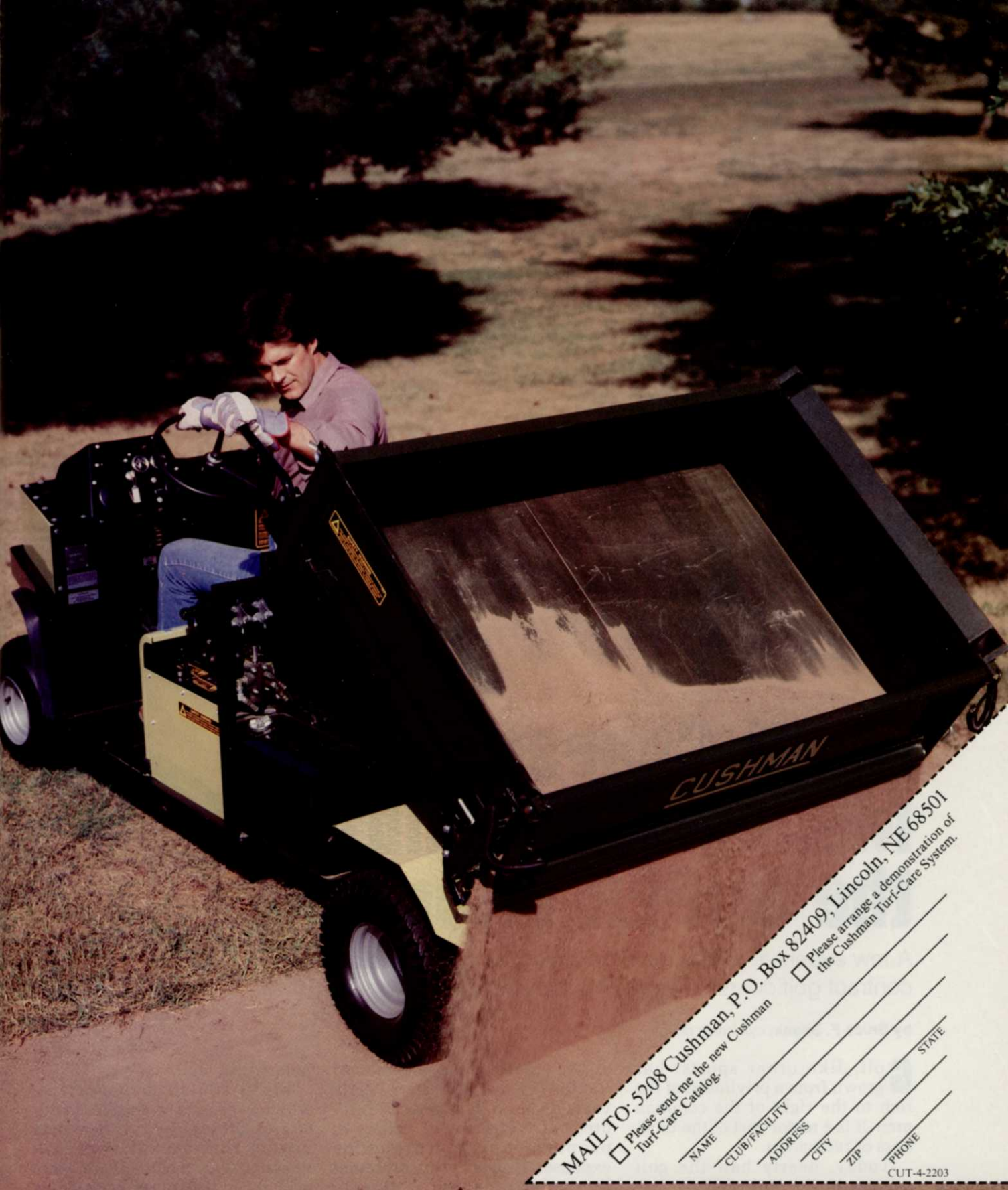

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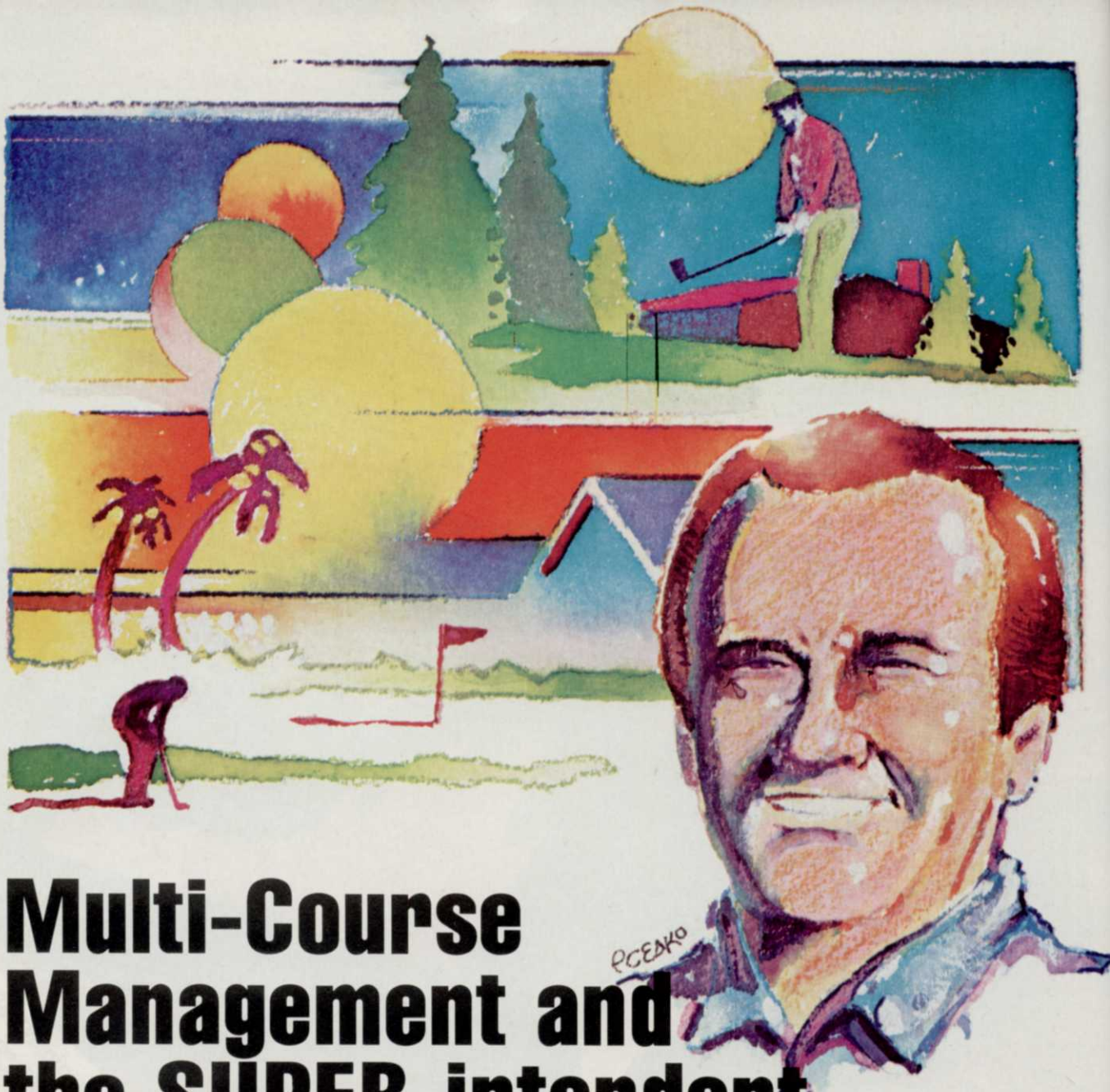

Multi-Course Management and the SUPER-intendent

A few superintendents manage a number of courses as economics favor contract golf course management and leasing.

by Bruce F. Shank, executive editor

Golf, like other sports, has grown from a priviledge of the rich to the right of the common man. It is a major part of the business of recreation.

Today, nearly half the golf courses in the United States are public. The few wealthy families, who played golf in the late nineteenth century on courses situated among the dunes of the Eastern Shore, have grown to more than 17 million golfers of all incomes.

The greenskeeper, a person of limited responsibility in the early years, is now in charge of hundreds of thousands of dollars in property and maintenance expenses. Golf is big business and the superintendent is largely responsible for the product.

The responsibilities of the superintendent continue to grow as owners or operators of more than one course assign a group of courses to him. This new role has various titles, but super-superintendent fits well.

Multi-course management, which began in Los Angeles in the 60's, might explode in importance during this decade. Approximately 300 golf courses are operated by multi-course companies today and that number may double by 1985. The rate of growth in multi-course management is not restricted by construction of new golf courses or even ownership. It is tied only to the speed at which lease or management contracts

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Circle No. 152 on Reader Inquiry Card

are signed and the capacity of the multi-course operator to expand.

Starting in L.A.

In 1960, Zeke Avila, then superintendent of Hacienda Golf Club in Mission Viejo, CA, signed a contract to maintain Arcadia Golf Course, a municipal course in Arcadia, CA. The next year he quit his job at Hacienda and started looking for more courses to maintain.

Twenty years before, Avila entered golf course management as part of the crew at Lakeside Country Club in Whittier, CA. For $65 per month he worked six days per week and every other Sunday learning how to maintain a golf course. He reflects, "The golf professional was in business for himself but not the superintendent. I believed I could work out something like the pro."

Today, Avila operates ten golf courses in Los Angeles and Palm Springs grossing more than $2.5 million per year. He is considered

Zeke Avila, *the father of contract management.*

the father of contract golf course management.

If Avila is the father of contract golf course maintenance, then David Price is the dean. Price, a property lawyer for Getty Oil in Los Angeles, recognized the opportunity in golf club management in 1970. He negotiated a lease for Westchester Golf Club in Los Angeles and hired Richard Bermudez as superintendent. With Bermudez, assistant Vicki Higgins, and civil engineer Sandy Burns, Price carefully built California Golf-Tennis. Now called American Golf Corp., Price's company operates 50 golf courses from California to New York. He recently negotiated a lease for six municipal courses in four boroughs of New York City.

The largest single owner of golf courses is Club Corporation of America (CCA) in Dallas, TX. CCA was founded by attorney Robert Dedman in 1957 and today operates more than 90 golf courses and 30 city clubs, including Firestone and Inverrary.

James Faubion is director of golf operations for CCA. Seven regional superintendents report to him. "I function mainly as a consultant to our superinten-

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Finest, self-propelled handle-bar unit in the field. Outstanding leverage and control! Cuts out stumps . . . up to 30" wide, down to 8" deep, without repositioning.

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- Rugged 18 hp engine.
- Easy to operate . . . to maneuver . . . to transport.

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Vermeer Stump Cutters

Fastest, most cost-efficient, most effective way to remove dangerous, ugly tree stumps! Hydraulically cuts 'em out in minutes.

- Simple one-man operation.
- Easy to maintain.
- Four different sizes . . . from economical, self-propelled handle bar-style models to powerful commercial units.

Circle No. 158

dents, not someone who tells them how to run their courses," Faubion said.

CCA owns most courses and operates each as its own profit center. Central purchasing of some equipment and supplies makes CCA a big factor in the golf course market from a manufacturer's viewpoint.

Jack Nicklaus's companies design, operate, and consult many golf courses, including Muirfield Village in Dublin, OH, and St. Andrews in Hasting-on-Hudson, NY. Edward Epchells is president of Golf Turf Inc., a subsidiary of Jack Nicklaus Cos., North Palm Beach, FL. Golf Turf Inc. consults 34 courses on agronomics and maintenance operations. Jack Nicklaus Club Management, established originally to consult on clubhouse operations, has expanded into total club management under contract.

Environmental Industries of Calabassas, CA, a multi-million dollar landscaping company is exploring golf maintenance contracting as part of its services to municipalities. ChemLawn made a stab at golf course maintenance in the mid-70's but retreated to concentrate on its primary customer, the homeowner. Certainly, ChemLawn has the technical resources to expand into golf course operation by adding knowledgeable superintendents to handle management.

Multi-course advantages

Operating a golf course can be a business separate from ownership. It was this discovery that opened the field to rapid growth. Contract maintenance or operation relieves the owner, often a group of investors or municipality, of operational headaches. This is generally done by either a lease or contract for services.

The keys to contract operation are agronomic and business expertise, better control of labor, and discounts from volume buying.

Contract golf maintenance has its critics, often other superintendents who suspect contract operators lower standards to make a profit. And, since contract maintenance is often utilized to solve union problems, a scab image persists.

When American Golf Corp. leases a course, it is taking a risk. Since its income is based upon greens fees it can't afford to let the course scare away golfers.

Certainly Jack Nicklaus doesn't want his name associated with poor maintenance. He designs many of the courses his Golf Turf Inc. advises. His customers want the prestige of the Nicklaus name for their courses and are willing to pay for it. Real estate developers can attract more investors when the project is associated with Nicklaus.

When a company specializes in managing golf courses it learns the tricks to efficient operation, tricks a single superintendent may not know, especially if he has

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- 24" diameter tubing available in 100 ft. lengths.

*rated at 100 hp.

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- 35 hp Deutz diesel engine.
- Hydraulic steering and propel.
- Just 35½" wide.

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A New Generation

always worked for courses where money is not an issue.

As golf becomes more a business and less a game for the wealthy, operational efficiency becomes more important. Most new courses are resort courses run as investments in recreation, a profitable option for today's investors.

Men like Avila and Price have discovered investors aren't the only ones who can make a profit. So can the operators. They realize they can move equipment and crews from course to course when necessary. They know they have clout with suppliers when buying for ten courses instead of one. These savings alone can represent a reasonable profit without changing maintenance practices.

"One of my men works as hard as three municipal workers," says Avila. "He is given specific responsibilities and takes pride in his work or he answers to me. He is also directly responsible for the equipment he uses so there is no one to blame for breakdowns except himself. If a breakdown does occur, we can get a replacement machine to his course within two hours."

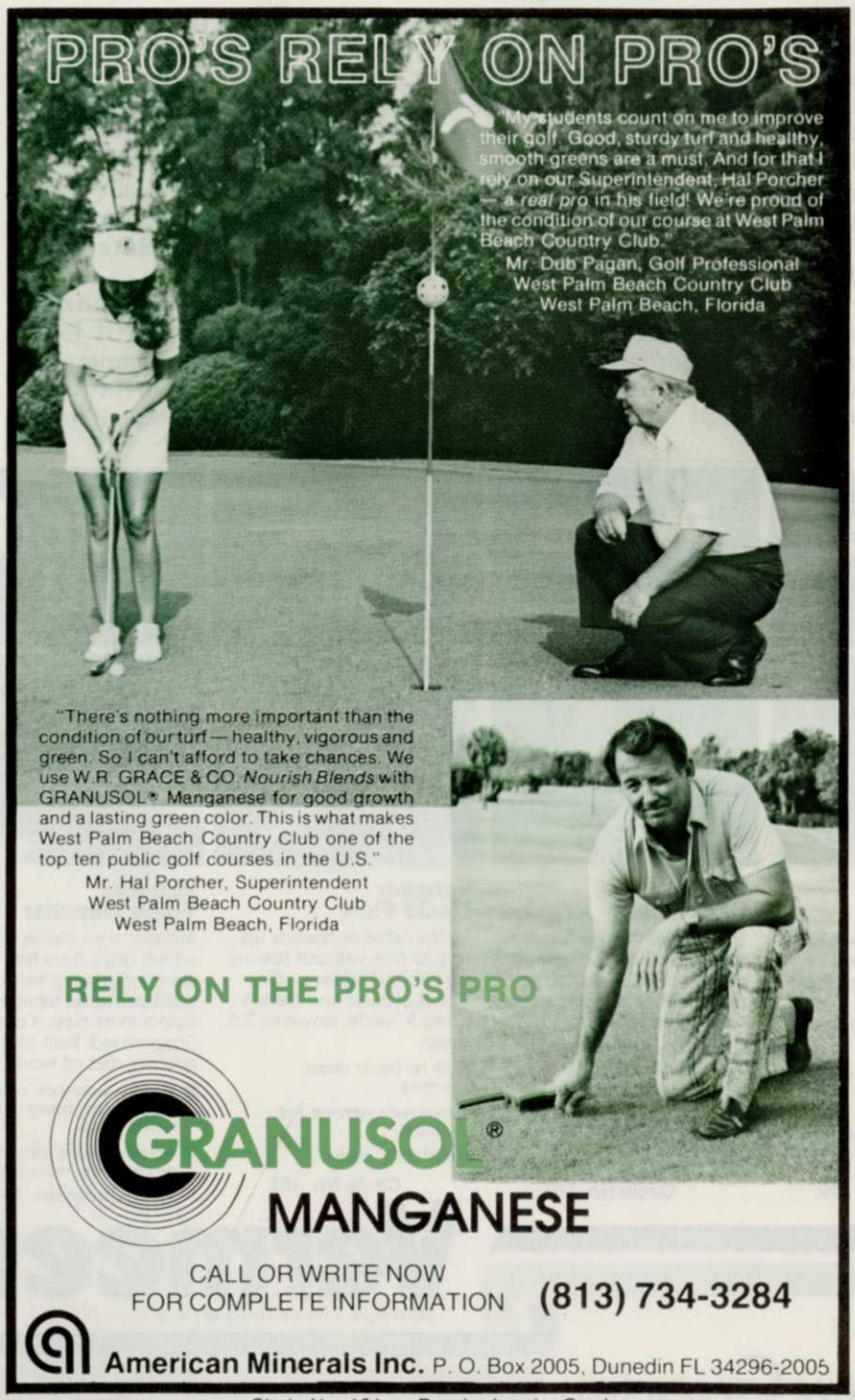
"The municipality or owners have the assurance that if one of our men burns a green," Avila states, "our $1 million insurance will cover it. We can't afford dissapointed golfers any more than the owner can. Owners negotiate with me, not a union. I take care of all fringes and labor disputes. We work with the owner to establish a definite set of specifications for maintenance and operation."

Mike Heacock, one of three regional super-superintendents for American Golf Corp., was an opponent of the multi-course management concept before he left Lakeside Country Club to join AGC. "I expressed my opinion to Bob Williams, president of AGC," says Heacock, "and instead of throwing me out of his office, he hired me to correct my concerns." Heacock is responsible for 17 courses in southern California. Ken Sakai is in charge of four courses in northern California, and Richard Bermudez handles the rest. Bermudez recently hired John DeMatto from Pinehurst to run the six New York City courses.

AGC leases its equipment instead of buying it. Due to its size, AGC was able to negotiate a financing package with Litton Industries to buy Toro equipment and Textron to buy Jacobsen equipment. This reduces the financial exposure of the company to approximately the length of it golf course leases. It also makes AGC a national customer instead of a regional customer.

"Capital improvements to a course," says Heacock, "are either deducted from the lease or built into the greens fee. This gives the municipality, which generally just wants to break even, a chance to improve its course without going to the voters for a bond

continued on page 84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LANDSCAPE MANAGEMENT

The Golf Superintendent

Time, money and personnel present greater problems to today's superintendent than anything Mother Nature can dish out.

by Maureen Hrehocik, managing editor

Time and money. Those two words seem to sum up the greatest concerns facing golf course superintendents across the country.

In an informal survey conducted by WEEDS TREES & TURF, declining budgets and increasing expectations from boards of directors and golfers and an increasing work load, have done more to hobble golf course superintendents than Mother Nature ever could.

"What I've found hard is the ability to hire competent people who take pride and an interest in their work," said one superintendent.

"I think everyone is interested in providing a quality product at minimal cost," said another, "but more and more members are wanting more, but aren't willing to pay for it."

A little more than half of the respondents have a planned replacement program for their equipment.

Yet another Midwestern golf course superintendent agreed.

"Our biggest problem is coming up with adequate funding to accomplish the standards demanded by the management and golf patron. We want to satisfy the golfer, but in the long run, do what's best for the course."

Survey results show the WEEDS TREES & TURF respondents to have, on the average, 10 years experience as a superintendent and managing a privately-owned, membership restricted 18-hole course. Eighty-seven percent are members of local golf course superintendents' associations with 66 percent of those surveyed members of the Golf Course Superintendents Association of America.

WT&T Profile of a Superintendent

- Been a superintendent ten years
- Manages an 18-hole, privately owned, membership restricted course
- Belongs to a local golf course superintendents' association

Greens fees at the courses averaged $6 for nine holes (a high of $18 and a low of $3.25) and $13 for 18 holes (a high of $50 and a low of $5). Rounds played have steadily increased, as have maintenance budgets, however not as much to offset burgeoning demands on the superintendent's time, crews and areas of responsibility. Most responses came from the South, Midwest and East.

In 1981 the average respondent's maintenance budget was around $150,000, jumping to $167,277 in 1982 and $183,568 in 1983. The range was from a high budget of $545,000 for one course to a low of $21,000 for another.

Equipment

A little more than half of the respondents have a planned replacement program for their equipment. A vast majority preferred hydraulic to mechanical drive mowers. Ninety six percent serviced and repaired their own equipment.

In the golf cart area, most superintendents were not involved in the concession with

Typical Annual Budget

- **Herbicides** ____ $2,396
- **Fertilizers** ____ $11,245
- **Fungicides** ____ $7,985
- **Seed renovation/ establishment** $1,735
- **Seed for winter overseeding** ____ $2,933

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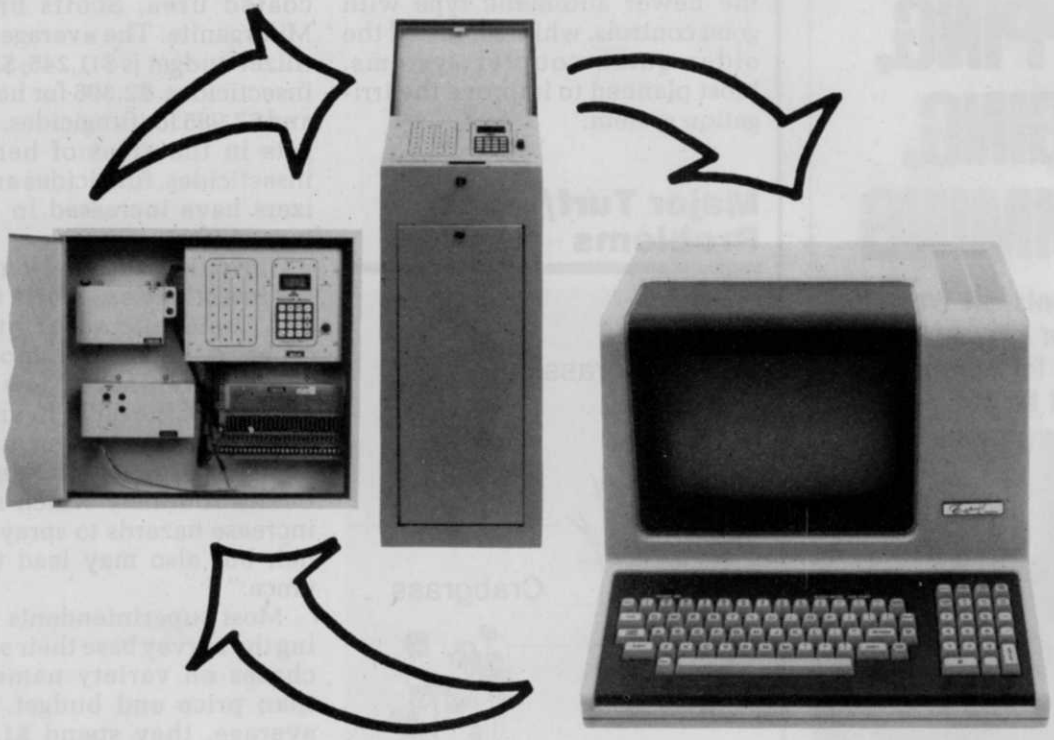

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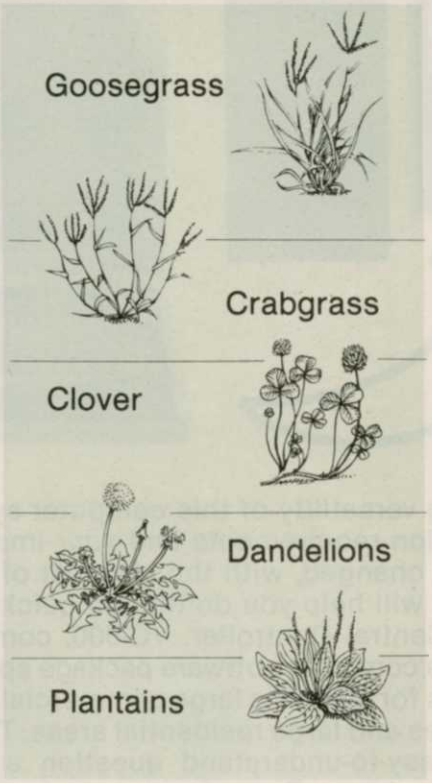
only a little less than 5 percent maintaining the golf cars. Courses averaged 40 cars with E-Z-Go the preferred manufacturer.

There was almost an even split of those who delayed purchasing turf equipment the past two years and those who didn't.

None of the respondents picked up grass clippings on fairways.

Irrigation systems were mainly the newer automatic type with good controls, while some had the older quick-coupler systems. Most planned to improve the irrigation system.

Major Turf/Weed Problems



Weeds, trees & insects

While weather presents a perennial problem to the golf course superintendent, dandelions, crabgrass and clover add to the natural problems he must contend with. Grubs, sod webworms, cutworms and armyworms, are the most troublesome and frequently-cited turf pests. Japanese beetles, scales and webworms are the three most bothersome tree and shrub insects.

Chemicals

A majority of superintendents prefer liquid concentrates in the chemical formulations they use. A majority used IBDU (Par Ex) slow release fertilizer, sulfur coated urea, Scotts brand, or Milorganite. The average turf fertilizer budget is $11,245; $2,895 for insecticides, $2,396 for herbicides and $7,985 for fungicides. All budgets in the areas of herbicides, insecticides, fungicides and fertilizers have increased in the past two years.

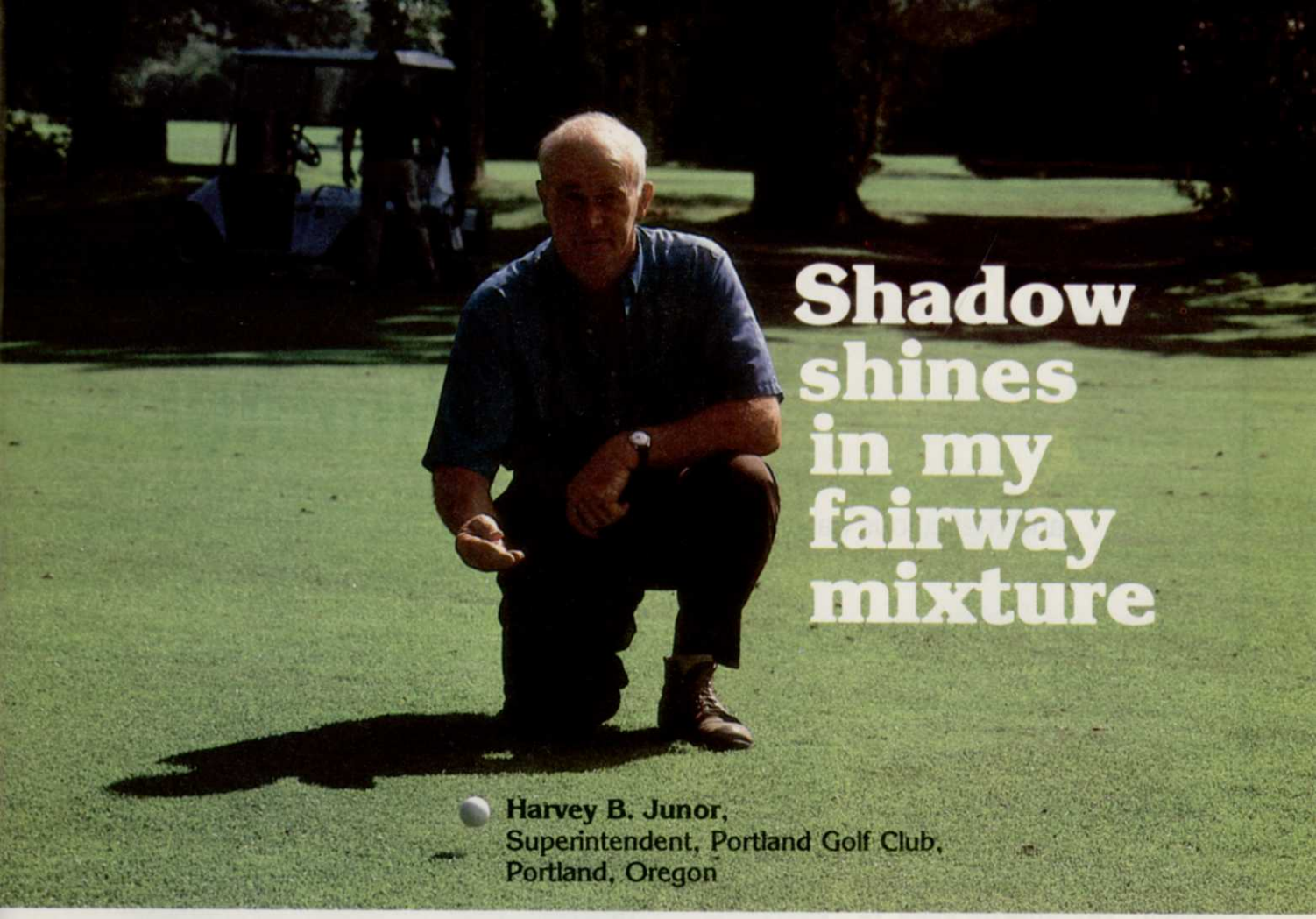
"I would like to see longer-lasting insecticides come on the market," said one superintendent. "There has been more turf damage over the last few years as supplies of the older hydrocarbon pesticides are being used up. Some courses are spraying insecticides routinely which not only increase hazards to spray personnel, but also may lead to resistance."

Most superintendents answering the survey base their seed purchases on variety name rather than price and budget. On the average, they spend $1,735 for seed renovation and $2,933 for winter overseeding annually.

Other superintendents and industry publications provide the best buying sources followed by extension agents, advertising, and promotional literature.

While management is expecting more from the superintendent, many respondents said the need for being recognized as a turf professional was still great.

"I find it hard to convince the management of the course that there are different conditions on the course that I must contend with and to have them view me as a professional who knows his job. Trying to control this facet of the operation is a bigger headache than any turf problems I may have." **WT&T**



Shadow shines in my fairway mixture

Harvey B. Junor,
Superintendent, Portland Golf Club,
Portland, Oregon

Harvey Junor mixes 25 percent Shadow fine fescue with CBS brand perennial ryegrass blend to overseed his fairways, and is initiating a tee overseeding program using the same combination. Harvey finds that a Shadow/perennial ryegrass mixture on his fairways requires less watering than the old Poa annua, while effectively crowding it out. His Shadow performs exceptionally well where trees compete for sunlight, water and nutrients.

Like Harvey's prestigious Portland Golf Club, more and more courses from the transition zone north are mixing Shadow fine fescue with turf-type perennial ryegrasses like Citation, Birdie, Omega, Manhattan and Manhattan II for effective drought and shade tolerance. Ask your distributor for Shadow, then watch *your* course shine in the shade.

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Pinehurst

Grooming a champion takes experience, long hours and meticulous care -- three of Wayne Maples' and Lew Metts' specialties

by Maureen Hrehocik, managing editor

"Intense" is the name of the game at Pinehurst Country Club.

The Pinehurst, NC, vicinity has one of the highest concentrations of golf courses in one area in the world. The six-course complex (the first active golf course complex built in the U.S.) totals 850 acres with 630,000 square feet of greens with an average of 1,500 people playing a day during peak season. The club is open 12 months a year and had a whopping 1983 business increase of 126 percent.

"Intense" is a household word at Pinehurst. Ask two of its superintendents, Wayne Maples and Lewis Metts.

Maples' prestigious No. 2 course (this year named to *Golf Digest's* Top 10 courses in the country), averages 260 people playing a day during peak season.

Lew Metts, left, *is in charge of Courses 1, 3 and 5 at Pinehurst.*

"There's more pressure here to keep the level of maintenance up because of heavy play ..."

The club's computerized tee time system turns people away on many days.

Because of the caliber of the course, it must be kept in tournament condition at all times. That's pressure, pure and simple.

Metts, in charge of courses 1, 3 and 5, starts his day at 4:30 a.m. during the busy summer months and usually ends it around 8 p.m. There is still not enough time to get everything done.

Both men's courses are part of an overall $1.55 million maintenance budget, with each course having its own individual budget and equipment.

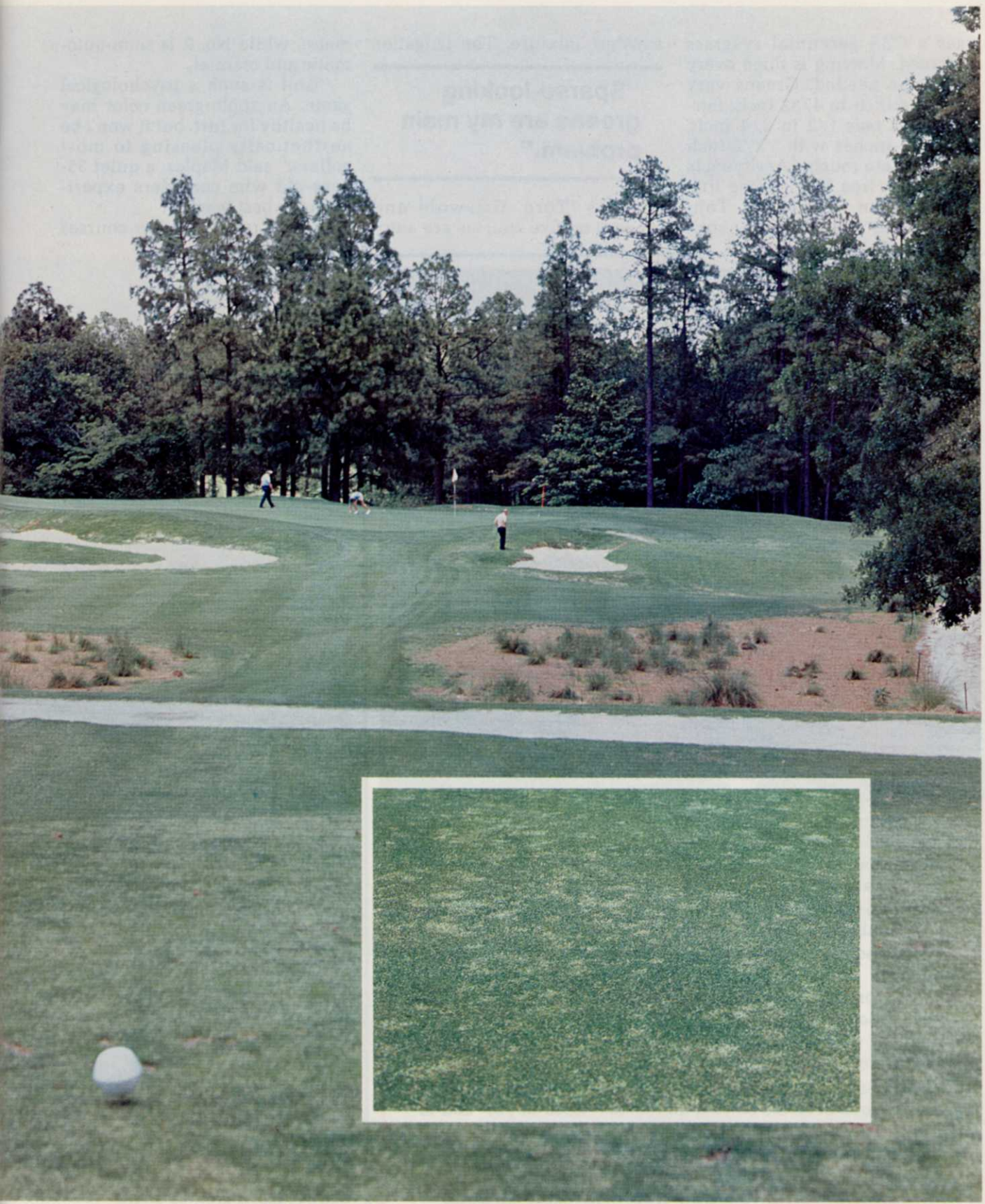
Maples and Metts work with Lee Dalton, superintendent on course No. 6 and Bob Farren on course No. 4. Bill Donnelly assists Metts and Barry Carter is another Pinehurst assistant superintendent.

Lofty origins

Donald J. Ross designed courses 1 through 4 at Pinehurst. It is course No. 2, though, with its small, sloping greens, deep bunkers, loose, sandy soil and rough accented with love grass, that has emerged as the architect's *tour de force.* Because of its sloping greens and fringe areas, No. 2 has earned the dubious distinction of being the most difficult course in the world to play from within 50 yards of the greens.

"Sparse-looking greens are my main problem," said Maples.

Tees, greens and fairways are common bermudagrass. Maples



Par 3 on *Pinehurst No. 2. Inset shows Poa annua in bermudagrass fairways.*

uses a CBS perennial ryegrass overseed. Mowing is done every day or as needed. Greens vary from 1/4 inch to 4/32 inch; fairways and tees 1/2 to 3/4 inch; roughs 2 inches with 1 1/2-inch intermediate roughs. Aerifying is done from tree line to tree line with a Ryan Greensaire. Topdressing is a 3-2-1 sand, soil, sawdust mixture. The irrigation systems (Toro, Griswold and Moody) on five courses are automatic, while No. 2 is semi-automatic and manual.

"Sparse-looking greens are my main problem."

"Golf is such a psychological game. An apple green color may be healthy for turf, but it won't be aesthetically pleasing to most golfers," said Maples, a quiet 35-year-old who considers experience the best teacher.

"I was raised on the courses

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Wayne Maples grew *up on the courses at Pinehurst and manages the development's most prestigious course, No. 2.*

here at Pinehurst," he said.

He worked with his uncle, Ellis Maples, who designed course No. 5.

Starting off his career as a superintendent at Pinehurst, Maples left to build a course in Alabama, worked at Lake Surf (now Woodlake) and Foxfire, both in North Carolina, and then returned to Pinehurst. Short courses at Virginia Polytechnic Institute and Clemson have rounded out Maples' work experience.

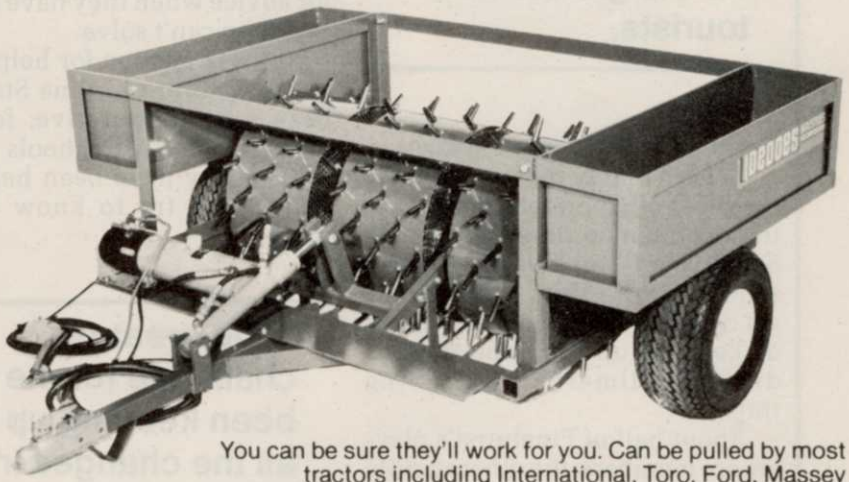
Pinehurst uses Toro Parkmasters, Greensmasters and Groundsmaster fairway mowers, Jacobsen Greensking walking greens mowers and Cushman-Ryan trucksters and outfront mowers. The more than 500 golf carts are taken care of outside the turf maintenance operation.

Working with Mother Nature

The climate is Metts' biggest problem.

"We're in the transition zone and it's hard to deal with," he said.

Trailer aerator/dump box package by Dedoes: easy, quick and effective.



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Metts controls pythium with Subdue and Terrazole. Chipco 26019, Acti-dione and Thiram take care of dollar spot and brown patch.

"Our disease program is both preventive and curative," he said. "There's a big difference growing bent and bermudagrass down here than in other parts of the country."

Metts, 40, a superintendent for the past 12 years, got his B.S. in Agronomy from Penn State, studying under Dr. Joe Duich. He has been at Pinehurst 2 1/2 years.

About half of Pinehurst's players are members, the others guests and tourists.

"There's more pressure to keep the level of maintenance up here than at other courses I've been at because of the heavy playing schedule," he said. "You never get caught up from the standpoint of keeping up with the golfers' divots, ballmarks and raking traps."

About half of Pinehurst's players are members, the others guests and tourists.

Metts grew up in Johnstown, PA. He worked at Norfolk Golf Club in Pennsylvania, did a stint in the military, was superintendent at Oxbow in Ohio for three years and worked at Parkersburg Country Club in West Virginia before coming to Pinehurst.

Needs in the industry

Both men, while recognizing very distinct needs in their industry, are realists.

"The greatest challenge for me has been keeping up with all the changes in equipment and chemicals," said Metts. "There have been more changes in the last year than I've ever seen. The EPA has banned chemicals that I've used with success for years. The equipment, on the whole, though, is better."

Equipment-wise, Maples disagrees.

"I don't mind change," he says. "There is always going to be change, but it has to be progressive change. Some technology has surpassed its usefulness like a lot of the hydraulic junk that's on the market. Everything seems to be hydraulic and with hydraulic equipment there's more chance of damaging the turf."

Metts would like to see the market introduce a small, lightweight mower that won't compact soil and better tee mowers.

Both superintendents use extension agents and universities for advice when they have a problem they can't solve.

"I'll ask anyone for help," said Metts. "North Carolina State has been very cooperative; for that matter most turf schools across the country have been helpful. I don't even try to know everything."

"The greatest challenge for me has been keeping up with all the changes in equipment and chemicals."

Metts also says superintendents' associations are useful for the "intangible benefits" they offer.

And on days off will you find Maples' out playing the course he nurtures during the week? An emphatic "no."

"I really don't have enough time to become a good golfer. Besides I go out and see everything that's wrong or that I'd like to do better. I can't help but look at it from the maintenance angle."

WT&T

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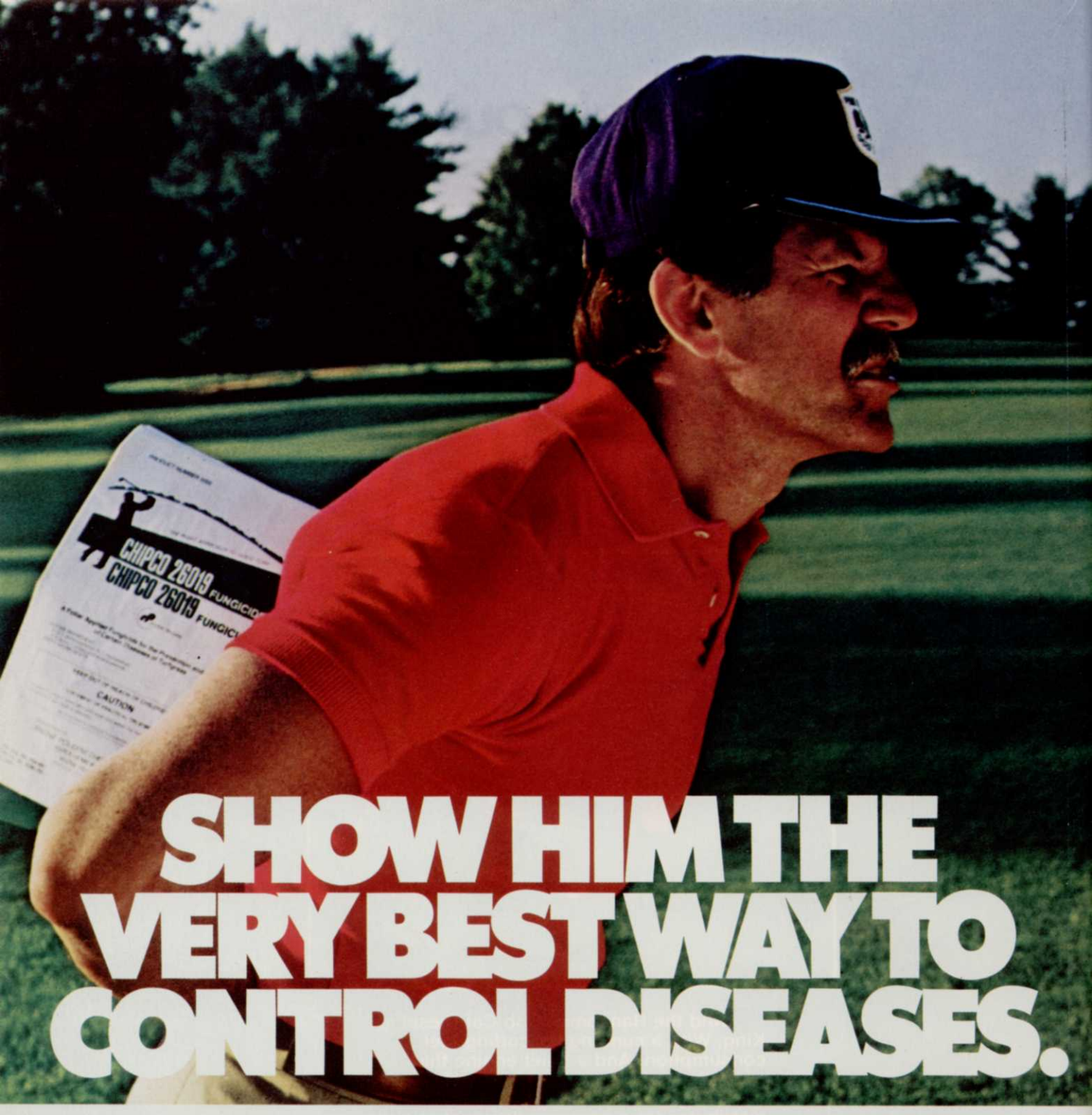

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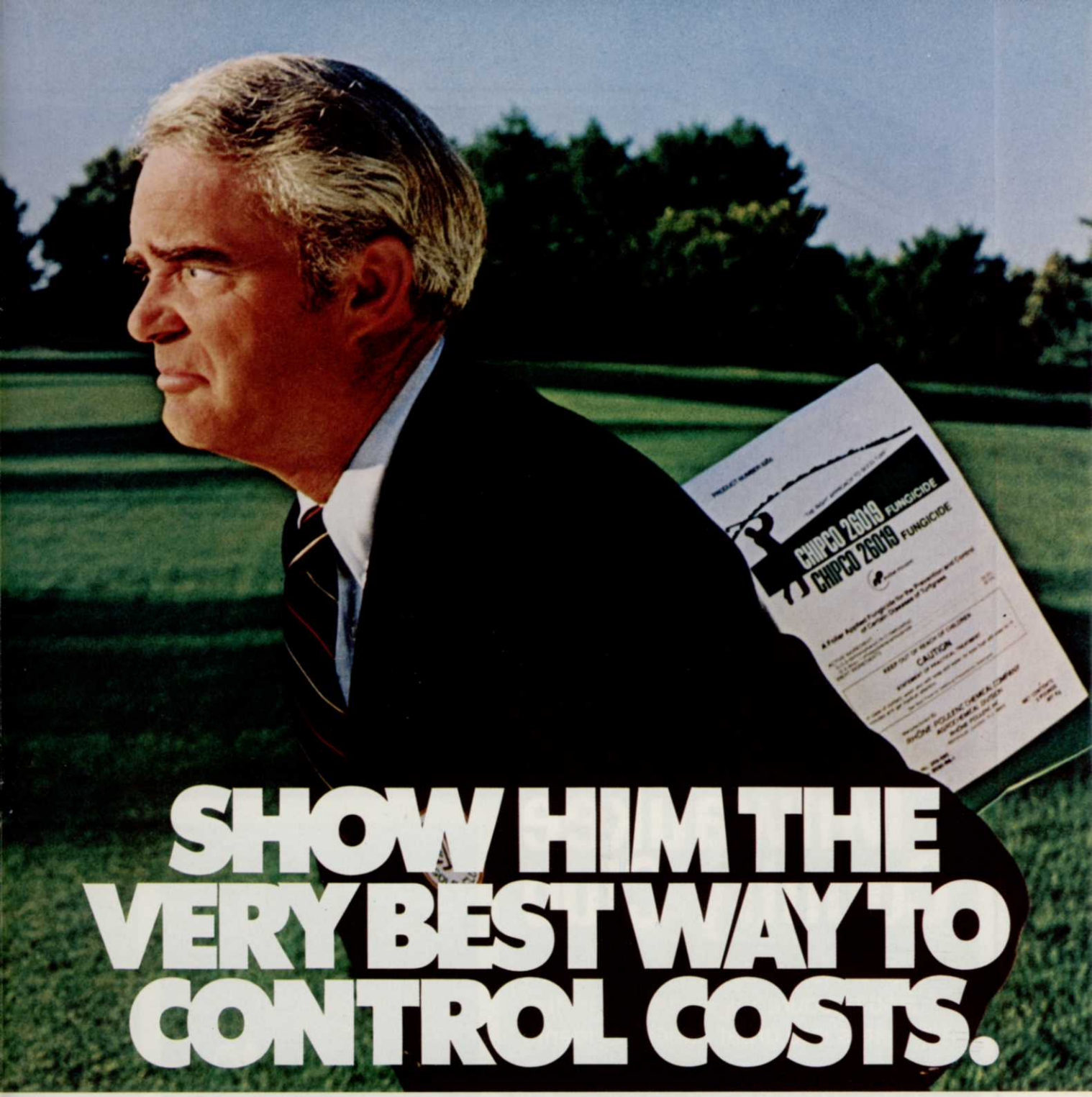

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Milwaukee Country Club

Dan Quast delegates responsibility and encourages ideas to turn turf graduates into great superintendents.

by **Bruce F.Shank,** executive editor

Danny Quast *and arborist Dennis Fermenich stand in the Club's nursery.*

When the Golf Course Superintendents Association of America coined the term "thinking superintendent" for information-sharing sessions at its conference and show, it may have been thinking of Dan Quast, superintendent at Milwaukee Country Country, Milwaukee, Wisconsin.

Quast, a 20-year veteran superintendent, enjoys the respect of MCC's 350 members, and consequently their support for his "thinking". They support a full-time arborist and crew, a tree replacement program to counteract losses from Dutch Elm Disease, a tree nursery, a student training program, an annual bluegrass reduction program, and Quast's time away from the Club to travel to national turf conferences and to be an instructor at Jacobsen Manufacturing Company's student seminars in Racine, WI.

After graduating from the turf program at the University of Massachusetts, Quast was hired by W.A. Cleary Chemical Corp. to work on its golf course, then became superintendent at Troy Country Club in Troy, OH, and later superintendent at Springfield Country Club in Springfield, OH. He moved to MCC in the fall of 1973 to help implement a number of improvements in the course recommended by golf course architect Robert Trent Jones.

Milwaukee Country Club was founded in 1926. The course, designed by Colt Allison, served its members faithfully for more than 42 years when the decision was made to host the Walker Cup in 1968. Fairways were narrowed and permanent bridges were built to cross the Milwaukee River.

About this time the membership started to feel the course was too rewarding to the low handicapper and too punishing to the high handicapper. "The course needed to be updated," says Quast. "In three short years we made all the changes Jones suggested. We repositioned and added traps. We expanded tees to withstand increased play and to make the golf shot more challenging. Aprons arounds greens were eliminated and some greens were expanded and traps added. Trees were planted along certain fairways to create doglegs. In general, the hazzards were made more realistic for today's golfer."

Clippings are removed *on German bent fairways to reduce annual bluegrass.*

Reducing Poa annua

Tees, fairways, and greens at Milwaukee Country Club are a mixture of South German and Seaside bentgrass. A major problem with annual bluegrass appears to be solved by a program put together by Quast, USGA Green Section Director Stan Zontek, and Jim Latham of the Milwaukee Sewerage Commission. It combines clipping removal, reduced compaction by use of light-weight equipment on fairways, low fertilization levels, an improved irrigation system, and use of Rubigan on greens.

"The course needed updating. It was too rewarding to low handicappers and too punishing for high handicappers." Dan Quast.

Fairways are mowed with a prototype Jacobsen HF-5 with baskets to remove clippings. Tractors and reel gangs are confined to the bluegrass roughs. Milorganite is the only fairway fertilizer. A two-row Toro Irrrigation system was installed in 1981. Fairways are aerified once per year in September.

Quast uses Cleary's FLUF on the greens. He is very pleased at the new turf fungicides (Bayleton, Subdue and Rubigan) and uses them all for his greens depending upon the problem. "No one chemical is a panacea for all turf diseases," Quast says. "I mix the new fungicides with Thiram to cover as many diseases as I need." Quast is especially pleased with the secondary benefit of Rubigan as a supressant to annual bluegrass.

Arborist on location

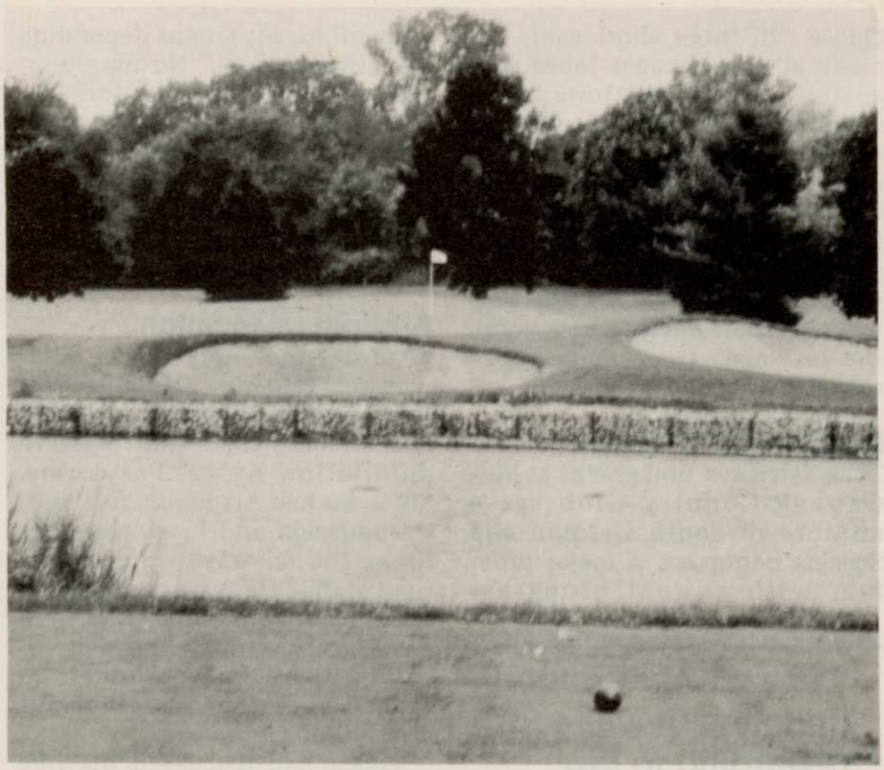
When Quast arrived at Milwaukee Country Club he was faced by the casualties of Dutch Elm Disease(DED) and massive defoliation by cankerworms. Since he had his hands full with the redesign and knew the elms lining the fairways would eventually fall to DED, Quast proposed the club hire a full-time arborist to develop a treatment and replacement program for trees, and to be responsible for the plantings around the clubhouse.

Quast had discussed his tree problems with Dennis Fermenich who was completing work for the North Shore Elm Research Project. The challenge interested Fermenich so much he applied for the job and got it.

The first year Fermenich cut down 102 elms on the course and took counts of the elm bark beetle using pheromone traps. He used weak elms to attract the beetles, then killed them with tree-killing injections of cacodylic acid. Removal of dead and dying trees, dormant oil sprays, injection of Arbotect, and fertilization of healthy elms has reduced the loss to one or two trees per year.

Fermenich replaced the elms with a variety of trees, including zelkova, plane tree, maple, linden, honeylocust, pin oak, red oak, and ash. These younger trees act as a frame for the remaining, majestic elms.

Many of the trees come from the nursery established by Fermenich behind the maintenance building. Whips are purchased and grown in the club's nursery to adapt to local conditions. They are moved onto the course when they reach three- to four-inch caliper.



Fermenich and his crew of two keep the clubhouse grounds immaculate and act as a reserve to the golf course crew when necessary.

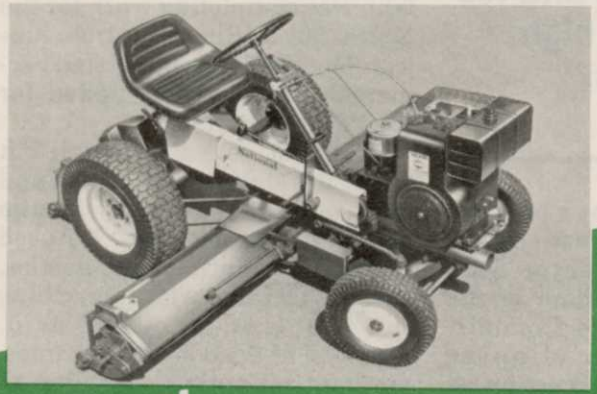
The next challenge for Fermenich is the tussock moth which has doubled each of the last three

"We had to cut down 102 elm trees the first year," said Fermenich

years. He has already established a prevention program using Bacillus thuringiensis. He hopes to catalog each tree in the next

continued on page 86

The Milwaukee River *separates one tee from a green. Wire baskets filled with rock stabilize shoreline.*



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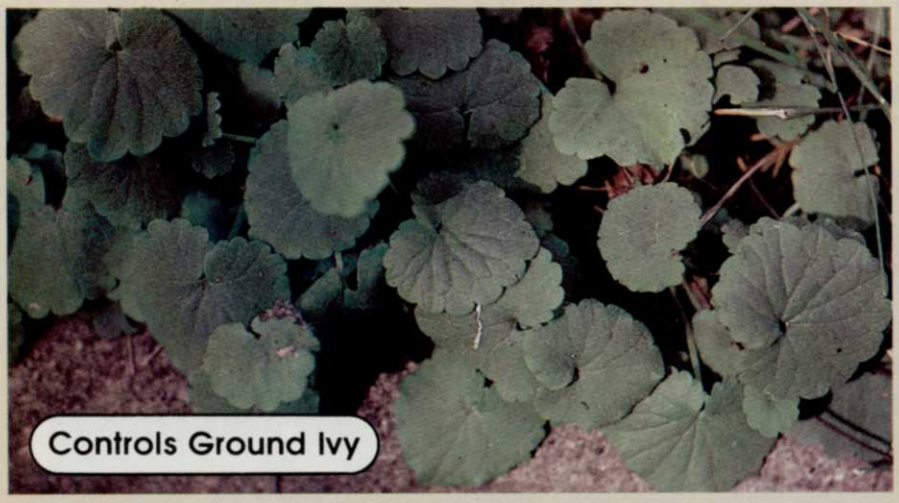

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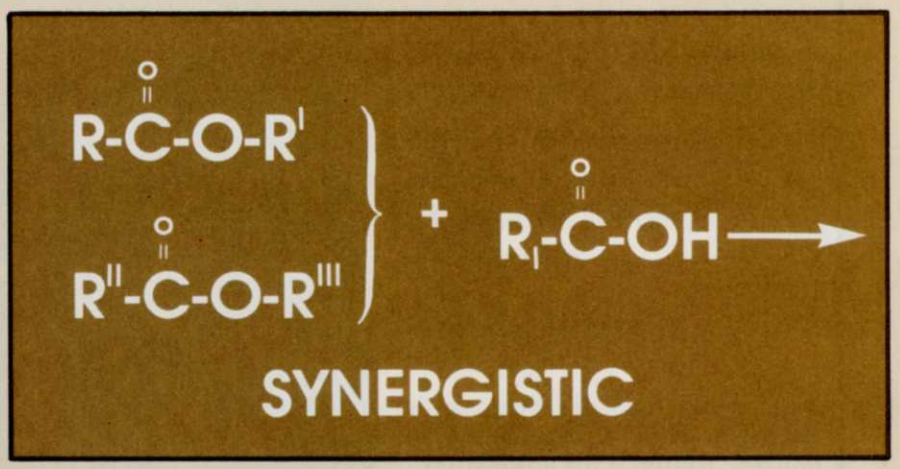

How we put Trimec Turf Ester together is, of course, a trade secret; but the chemical explanation above will immediately give you an indication of its remarkable power. You'll note that it is a unique combination of different esters with the ability to form a complex with dicamba, resulting in the most efficient broadleaf herbicide we have yet developed. Aren't you just itching to try it? Pick up your phone now and request your sample.

root system and result in total kill.

It's difficult to explain this time lag to some homeowners. They want to see those dandelions curl up right now, regardless of the temperature.

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He had Spurge and Oxalis in his Bermuda lawn. He applied Trimec Turf Ester in 107-degree weather. It discolored the Bermuda for a brief time, but it came right back — minus the Spurge and Oxalis.

Furthermore, he sprayed within 12 inches of a strawberry bed without doing any damage whatsoever.

Obviously, we don't recommend spraying Trimec Turf Ester in 107-degree weather; we don't recommend it for warm-weather grasses; and we certainly don't recommend spraying that close to a strawberry bed — but it does give you an indication that Trimec Turf Ester is indeed a remarkable product. Actually, it's more than that ... it's the most significant breakthrough in weed control since the introduction of Trimec itself.

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Circle No. 136 on Reader Inquiry Card

Illahe

Nestled in the shadow of Mt. Hood, a Salem country club is becoming more picturesque and efficient with Bill Swancutt's renovations

by Maureen Hrehocik,
managing editor

Renovation tops Bill Swancutt's list of priorities for his Salem, OR, course, Illahe. The superintendent of the 18-hole, private course who's Indian name means "country" or "place," says the William Bell design has caused some problems that he is working on correcting. Rebuilding tees are a top priority.

"Some of the tees have settled and we're in the process of rebuilding those," Swancutt said. "We've also worked on hole No. 4 which is a par 5 hole."

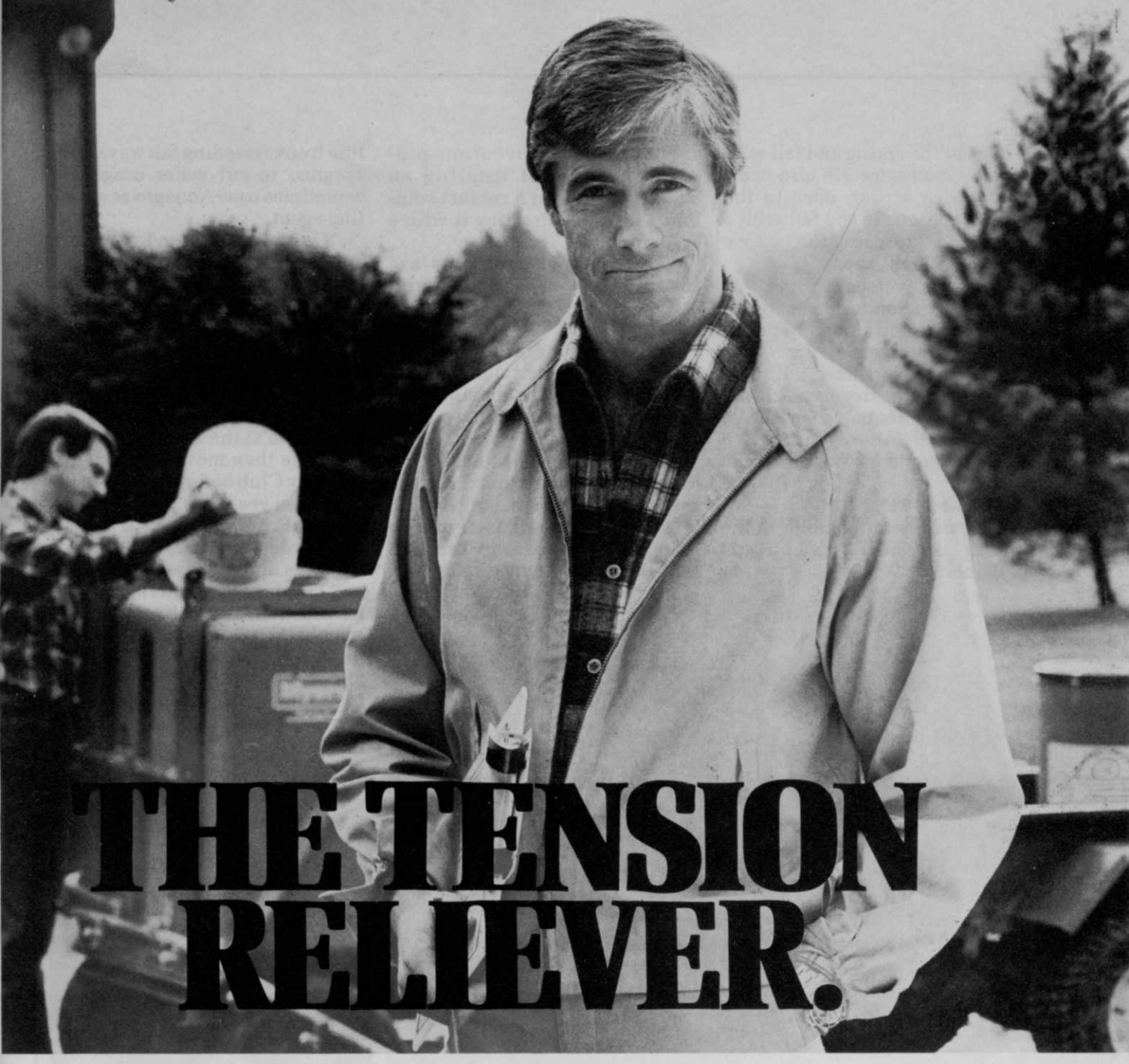
Other changes aren't as drastic. Off the first and the tenth tee there is an 80-foot drop to the fairway.

"It's very hard to keep mowed," Swancutt said. "I'm going to try using Embark (growth regulator) to keep the turf under control. I've used growth regulators before and they worked well."

Swancutt also uses Toro Turf Pro 84 triplex mowers on his predominantly annual bluegrass course and says the time they save is worth the extra cost to him. He likes the idea of being able to add attachments to the machines.

Greens are mowed six times a week at 1/8 inch; fairways are mowed three to four times a week at 5/8 inch depending on conditions; tees are also mowed three to four times a week at 4/16 inch. He

The first and tenth tees drop 80 feet to the fairway. *Swancutt is eager to try growth regulators on the slope because of its inaccessibility.*



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aerifies in the spring and fall with a Ryan Greensaire. He also overseeds twice a year, once in the spring and once in the fall with a CBS blend, "to stress the poa we have," Swancutt says.

Tees are overseeded and topdressed with Penneagle bentgrass in the spring and summer and are aerified once a year.

Greens are fertilized with 6 to 6.5 pounds of nitrogen per thousand square feet; tees with 3.5 pounds and fairways with 2.8 pounds. Roughs are not fertilized.

Disease prevention

"I use more water solubles in the spring and fall," Swancutt explained.

His disease prevention program consists of treating an affected area with a contact solution and then retreating it with a systemic.

"Our biggest problems are fusarium in the winter and anthracnose in the summer," he said.

He contracts out all spraying "that way we only interrupt play for a day. I don't use chemicals for poa control because it's too expensive."

Fairways are irrigated with a Rainbird automatic maxi control system. Roughs are irrigated 35 feet out. Swancutt is trying to reduce his expenses to keep his $200,000 maintenance budget in line by overseeding fairways with ryegrass to cut water usage. He sometimes uses Aquagro as a wetting agent.

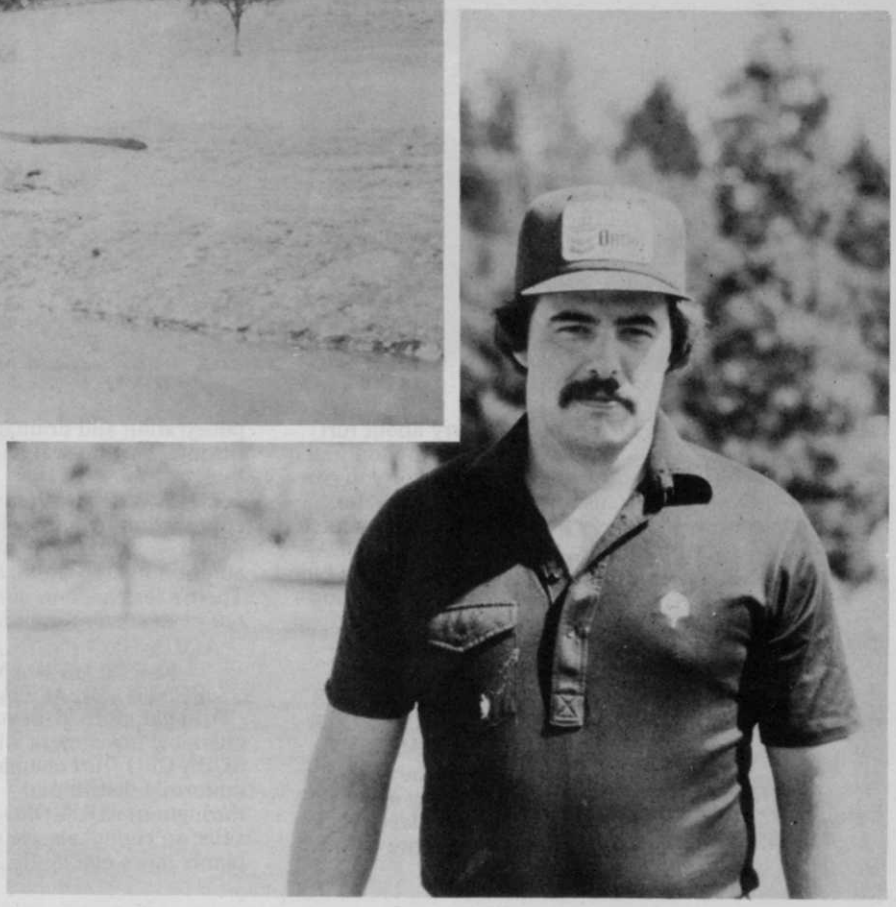
"Our fairways aren't real wide and we don't mow all the way up to the tees so that saves time," he said.

Challenges

Swancutt graduated from Oregon State in 1976 with a degree in agronomy. He worked part-time for awhile at the Eugene Country Club. He then moved to Tualatin Country Club before coming to Illahe three years ago. He is a member of the Golf Course Superintendents Association of America and the Oregon GCSA.

"The biggest challenge I face here is communicating with the membership," Swancutt said. "I have a good rapport with the greens committee and we discuss improvements to the course. We have a long list of priorities for improvements." **WT&T**

Part of Swancutt's renovation *project - rebuilding a sand trap.*



Bill Swancutt, *superintendent of Illahe Country Club, Salem, OR.*

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REGAL CHEMICAL COMPANY

Circle No. 142 on Reader Inquiry Card

Unionization

Whether or not a union is in your best interest depends on several factors for both employer and employee.

by Richard I. Lehr

Unions are not evil.

Some employers have had pleasant, successful working relationships with unions. But, unless an employer is willing to accept the possibility of strikes, boycotts, picketing and, in essence, having the union become a business partner, it is generally advisable to stay union-free.

Unions do not strike most of the time, but an employer never knows whether or not the union he has will be an aggressive, strike-oriented union. Many unions are reasonable to deal with, but an employer has no idea whether or not the union he may end up with will be reasonable or unreasonable.These uncertainties have led most non-union employers to prefer remaining non-union.

Size no concern

Many turf industry employers may regard themselves as too small to be a target for union activity.

Who would want to represent three or five employees? Eighty percent of all union elections are held in small groups, those of 50 employees or less. And though unions may not target these small employers, most union activity occurs because a current employee initiates the contact with the union. Thus, if a green industry employer is thinking he is immune from union activity because of his size and that a union would not want to fool with such a small employer, he should remember that a union may not contact him, but a disenchanted employee may contact the union. The employer then has a serious problem.

Many turf industry employers may regard themselves as too small to be a target for union activity.

Why unionize?

The reasons for unionization vary from company to company -- so should the approach for preventing unionization. The reasons for most successful unionizations can usually be broken down into:

1 Unreasonable Working Conditions - This is particularly troublesome in the Green Industry in the summer, when most employees must work long hours during hot days. An employer who does not recognize the efforts by employees during such times and express his appreciation for their work, whether it be through bonuses, another compensation program, or simply communicating that expression verbally, may find that discontent is rising because tempers are short and working conditions are uncomfortable.

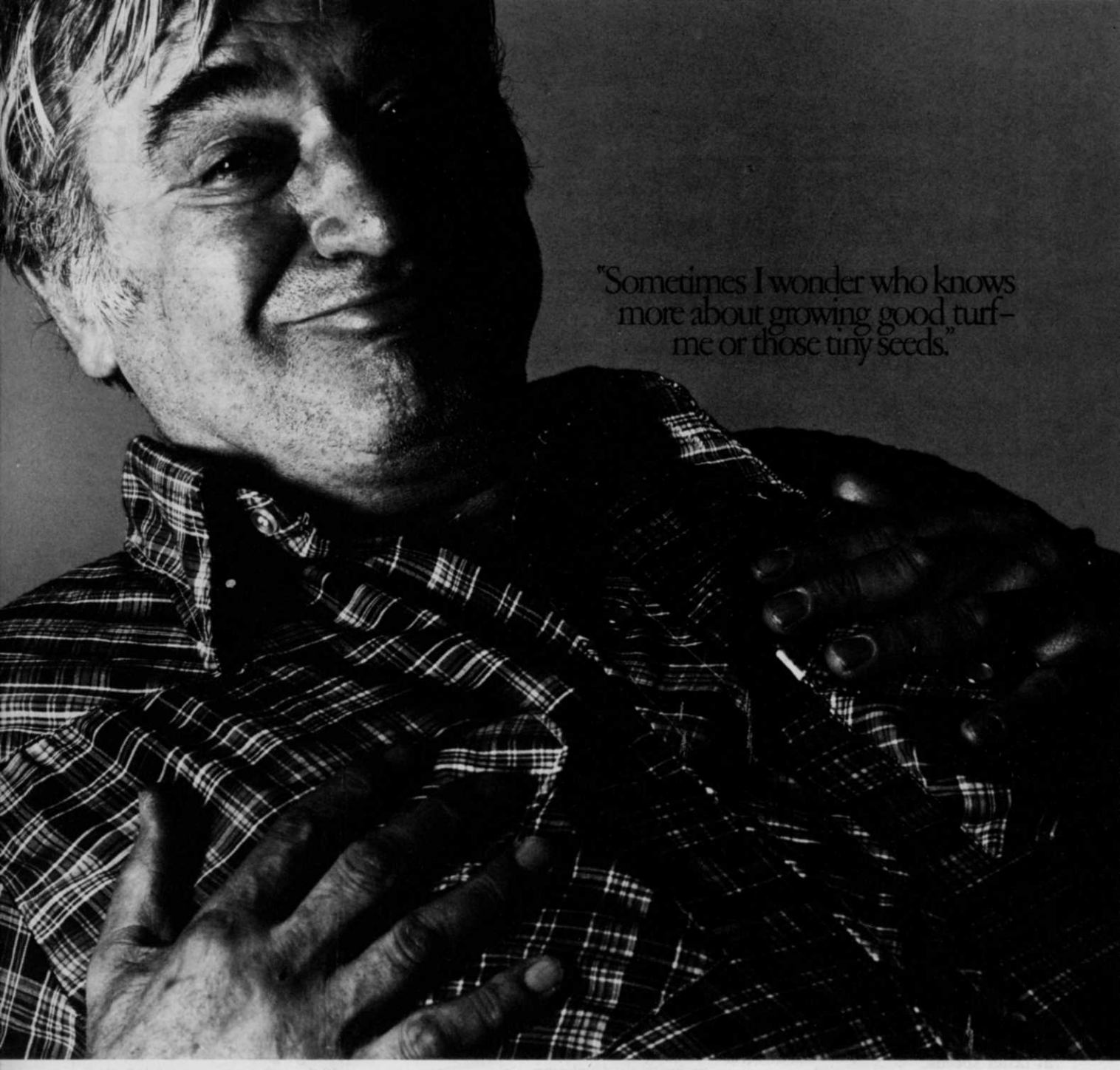
2 Favoritism - Employees who perceive that one individual is treated better than they for reasons unrelated to their job performance, skill or seniority may be attracted to the seniority system and grievance procedure offered by a union. Because many green industry employers are family-owned and managed operations, those employers need to be particularly sensitive about avoiding overt, preferred treatment for family members.

3 Concern for Employees as Individuals and Prompt Response to Employee Problems - The recent economic troubles of our country have heightened individuals' insecurity about their jobs and themselves. Additionally, in many households, it has complicated exisiting financial or domestic problems.

An employer who knows his employees as individuals can be useful in at least providing a forum for the employees to discuss personnel or business-related problems, even if the employer does not have the answers. Furthermore, this type of relationship promotes a sense of belonging, which is important

continued on page 63

Richard I. Lehr is a labor attorney with the Birmingham, AL, law firm of Sirote, Permutt, Friend, Held & Apolinsky, P.A.



It takes a big man to recognize the intelligence in a tiny seed.

But that's what makes today's turf manager tick. He's proud of what he knows and stands in awe of life's eternal secrets.

He can tell good turf just by the way it feels under his soles. But he can't know what the weather's going to do to the ground he planted yesterday.

He may get flooded out. Or maybe Mother Nature will bless his endeavor with a gentle soaking.

That kind of uncertainty can turn a man grey before his time. And it cultivates "wrinkles of character" in his face. Smooth lines that have marked the pleasure of a good day's work. And narrow creases that show you how hard some of those days have been.

People call it a weathered look. A turf manager just looks at it every morning in the mirror and wonders what the new day will teach him.

To get that grass to sprout and thrive, he may need to know a little something new. Those seeds have all the information they're ever going to get.

Pennfine Perennial Ryegrass covers more ground than any other turfgrass variety in the world. This ad pays tribute to the people who've sown that fifty million pounds of certified Pennfine seed.

Circle No. 137 on Reader Inquiry Card

What makes the Cushman Grass Grooming System worth the investment:

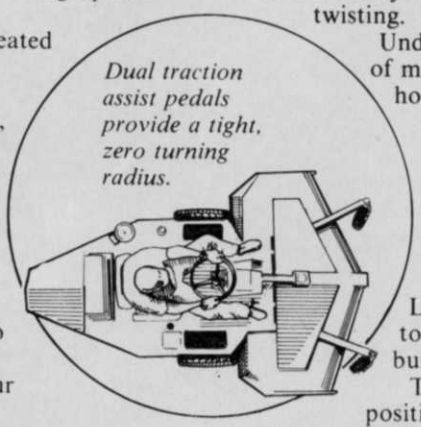
No mower on the market can match it for price and performance. Nothing cuts, catches and dumps as fast or as economically.

The problem with most mowers is that no matter how fast they cut, your work slows to a turtle's pace when it comes to cleaning up the clippings.

That's why we created the Cushman Grass Grooming System. With it you can cut, catch, dump and resume cutting without interruption.

But, as you are about to learn, the Cushman Grass Grooming System not only lets you do your work faster.

It lets you do your work better.



Dual traction assist pedals provide a tight, zero turning radius.

Engineered for hard work.

At the heart of our Grass Grooming System is the dependable Cushman Front Line™ mower.

And at the heart of the Front Line is a rugged, 18 hp, air-cooled OMC gas engine. It's the only mowing engine built for multi-speed work — lugging power at low speeds, agility at faster speeds.

This proven power plant is complemented by a drive train that's engineered for years of dependable service.

A hydrostatic transmission that gives the driver complete speed control via a rocking foot pedal.

A heavy-duty differential; a fully lubricated PTO shaft; and a high-capacity gear box — all engineered for virtually maintenance-free operation.

And that's just the beginning.

Built to last.

The Front Line is 1200 pounds of gutsy engineering.

Its mowing deck is 12-gauge carbon steel, reinforced, arc-welded and surrounded by a tubular torsion bar system that prevents twisting.

Underneath are 3 blades of machine-sharpened, hot-formed steel.

The floorboard is diamond-plate steel. And the 6-gallon fuel tank is made of terneplated steel.

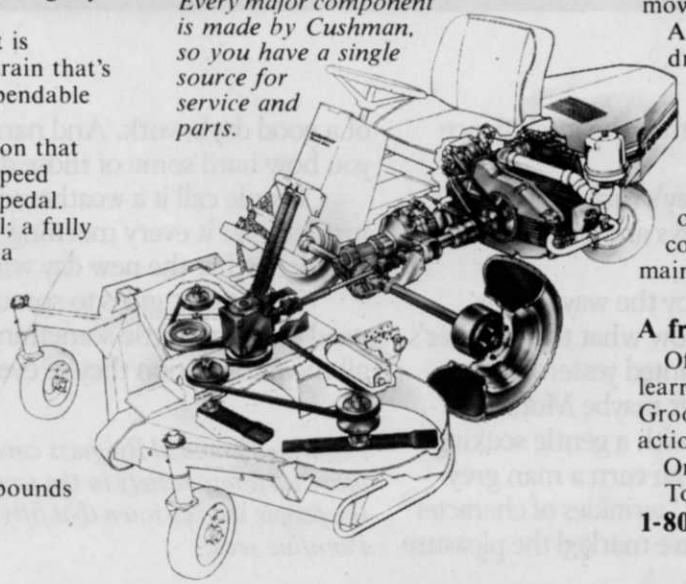
But the Front Line is not just built to last — it's also built for results.

The blades are positioned so that their cutting swaths overlap slightly, leaving no uncut strips of grass.

Dual traction assist pedals give the operator a tight, zero turning radius.

Springs transfer much of the deck weight to the tractor, producing smoother cutting and additional traction on any terrain.

Every major component is made by Cushman, so you have a single source for service and parts.



And while ordinary mowers often "bottom out" over hills and bumps, the Front Line may be equipped with an anti-scalp roller option that keeps the cut clean and even.

The finishing touch.

The Grass Caddy collects up to 16 bushels between dumps.

The innovative Cushman Grass Caddy™ makes the Front Line the world's most labor-saving mower. Mounted to the operator's right, the Grass Caddy collects up to 16 bushels of clippings and debris inside a durable, non-stick polyolefin hopper.

Then, when the hopper is filled, just back the Front Line up to a truck or container, engage the hydraulic control and the Grass Caddy hopper lifts 4½ feet above the ground and dumps.

In seconds, you're back on the turf mowing again.

And you've never once left the driver's seat.

The Grass Grooming System is available only from your Cushman Front Line dealer. He's in business for the long haul, with a proven track record of service after the sale and a complete line of professional turf maintenance equipment.

A free demonstration.

Of course, the best way for you to learn about the Cushman Grass Grooming System is to see it in action.

On your grounds.

To do that, just call us toll-free:

1-800-228-4444.

Circle No. 109 on Reader Inquiry Card

MAIL TO: 3579 Cushman, P.O. Box 82409, Lincoln, NE 68501

☐ Please send me the new Cushman Grass Grooming Catalog.

☐ Please arrange a demonstration of the Cushman Grass Grooming System.

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UNIONS *from page 58*

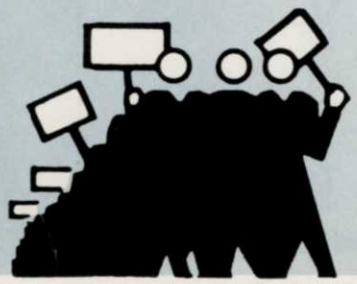
to most individuals. If an employee does not feel he belongs with the employer or is part of the company and team, perhaps he would feel that he could become part of something if he joined a labor union.

4 Wages and Benefits - These are issues that always arise in a situation where employees may want a union. Each employer should be sure that his wages and benefits are competitive with the industry and his geographical vicinity. Furthermore, because many employers in the Green Industry pay employees on a fixed salary for a fluctuating work week plan, it is important that employees realize how these complicated pay systems operate, so that during the long, hot summer days, the employees do not feel that they are underpaid because they are not getting time-and-a-half or overtime.

Though pay raises nationally are averaging four to six percent in many industries, the key factor that employees are looking for is improved health and benefit programs. A six percent raise is certainly appreciated, but, if a health care program is not provided that protects the employee and his family against catastrophic medi-

Unionization Reasons

- Unreasonable working conditions
- Favoritism
- Concern for employees as individuals; prompt response to problems
- Wages and benefits
- Due process at work



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When You Need a Top Utility Grass

Houndog is one of the better varieties of the new generation of turf-type tall fescues which are providing high quality, durable, low-maintenance turf in a wide variety of situations.

Houndog is an ideal choice for home lawns, parks and playgrounds, golf course roughs and athletic fields.

Rated as possibly the darkest green of the turf-type tall fescues, Houndog has proven it is drought tolerant and will prosper during periods of exceptional heat in the North as well as in the transition zone and upper South.

A moderately low-growing, leafy variety, Houndog approaches the modern Kentucky bluegrasses in appearance.

It provides the turf manager with the advantages of the legendary deep root system of the older pasture-type tall fescue varieties such as KY-31 and Fawn.

Houndog is normally cut at 1½ inches but will retain its appearance and prosper at heights up to three inches.

As a low maintenance variety, it is recommended that a minimum amount of fertilizer be applied annually.

Houndog is a product of

INTERNATIONAL SEEDS, INC.
P.O. Box 168, Halsey, Oregon 97348
Telephone: (503) 369-2251 • TWX 510-590-0765

Circle No. 124 on Reader Inquiry Card

cal matters, that raise could be wiped out quickly. We generally advise employers to focus on improving the health and benefits package, because that ultimately is more meaningful to employees.

5 Due Process at Work - Most states permit employers to terminate an employee for any reason, whenever they choose.

Employees are concerned about whether an employer has a fair and impartial approach to matters such as employee discipline or termination. This would include counseling with an employee about unsatisfactory job performance that could result in discipline or termination, giving an employee a final warning that continued problems could result in termination, and affording the employee an opportunity to respond to the employer's statements. This response would be investigated by the employer before the employer made his final decision.

Last year, more than 2,500 employers in the U.S. who were non-union the year before became unionized.

A union contract frequently contains a grievance and arbitration procedure, in addition to progressive disciplinary steps before an employee may be terminated. Modifying this structure is a good approach for promoting job security.

Last year, more than 2,500 employers in the U.S. who were non-union the year before, became unionized. Employers should disregard the obituaries written by many individuals about organized labor. Unionization will continue to be possible in the Green Industry unless each employer consciously decides to conduct employee relations such that employees believe they are being treated fairly in a non-union environment and do not need a union. **WT&T**

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010-ADVANCES IN TURFGRASS PATHOLOGY by Dr. B.G. Joyner & Dr. P. Larsen
Leading U.S. turf pathologists report on turfgrass diseases, pythium blight, snow molds, fairy rings, leaf spot of Kentucky Bluegrass in Minnesota, initial and filed fungicide screening, turfgrass disease resistance, etc. Contains new ideas on how to combat turfgrass problems. **$27.95**

655-TURFGRASS: SCIENCE AND CULTURE LABORATORY MANUAL by Beard, DiPaola, Johns and Karnok
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645-MANAGEMENT OF TURFGRASS DISEASES by J.M. Vargas
Identifies turfgrass diseases by description and illustration. Includes a holistic approach to healthy turf and lawns. Presents practical management strategies for golf courses, lawns and athletic fields. 204 pages, Illustrated **$24.95**

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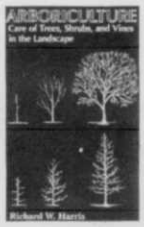
Written by an eminent turfgrass researcher, this USGA sponsored text is an ideal reference and "how to" guide. Details all phases of golf course operations including course design and construction, turf management, course administration, irrigation, equipment and disease and pest control. Fully Illustrated. **$45.00**

110,120-TURF MANAGERS' HANDBOOK by Drs. William Daniel and Ray Freeborg
This specially designed manual by leading turf specialists is a comprehensive, organized approach to turfgrass science and care. An easy, on-the-job reference for planning, purchasing, hiring, construction and plant selection. **$28.95 hardcover, $23.95 paperback**



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Provides comprehensive coverage of complete planting, site analysis, preparation and special planting methods, fully-detailed coverage of fertilization, irrigation and pruning guidelines on preventative maintenance, repair and chemical control, how-tos of diagnosing plant problems, practical data on non-infectious disorders, diseases, insects and related pests and pest management. **$34.95**

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A new fourth edition of this highly successful textbook presents essential concepts pertaining to water conveyance, application, storage in the soil and use by the plants. Basic underlying principles that govern irrigation practices are stressed. Generalized concepts are discussed and newly formulated practices are examined. **$39.95**

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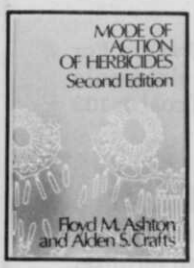

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Provides worldwide body of information on each class of herbicide. Cross-indexed tables of common and trade names of herbicides are included. New herbicides accepted since 1972 are listed in this revised second edition. Excellent practical reference for specialists in field of weed science. **$58.95**

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WTT 14

PROBLEM SOLVERS

by Balakrishna Rao, Ph.D., and Thomas P. Mog, Ph.D

Ammonium nitrate safety

Problem: *Is ammonium nitrate fertilizer explosive and dangerous to transport or store? Would you please discuss its safety from the explosive point of view? (North Carolina)*

Solution: I think you have mistaken ammonium nitrate fertilizer for ammonium nitrate which is explosive. These are two different products.

The ammonium nitrate is a low-density product produced for blasting purposes and then sensitized with fuel oil and ground walnut hulls. Heat and pressure from the blasting cap or dynamite can trigger the material to explode. This product is classified as a blasting agent by the U.S. Department of Transportation.

Ammonium nitrate fertilizer is a high density product produced for agricultural purposes. This can be purchased and transported in bulk or bags. It is classified as an oxidizer by the U.S. Department of Transportation. It oxidizes in the presence of heat, producing nitrous oxide and other gases. This nitrogenous nutrient is safe in storage and transportation. It will not explode when exposed to heat, fire, etc. Reports indicate that it can become potentially dangerous only when the material becomes contaminated with organic (carbon-containing), combustible or reactive materials such as organic chemicals, oils, solvents, acids or chlorates.

According to the reports, in case of fires involving ammonium nitrate fertilizer, in storage or in transportation, firefighters should be aware of the following:

1 Ammonium nitrate fertilizer dust is not explosive. Tests by the Bureau of Mines have reportedly verified this fact.

2 Ammonium nitrate fertilizer will not burn except when supported by combustible materials. It will melt and decompose when exposed to fire and heat, and its oxides will support combustion - even in the absence of oxygen.

Firewood unaffected by disease

Problem: *Is there any danger in using elm trees infected with Dutch elm disease as firewood? How good is this wood for fire? Appreciate your comments in this regard. (Ottawa, Canada)*

Solution: I am not aware of any particular danger in using elms infected with Dutch elm disease fungus. If the tree also had bacterial wetwood disease, then it may present a problem in drying and burning. Further, it may have an unpleasant odor. The diseased wood may also be infested with insects and serve as a breeding ground for bark beetles, which can spread the disease to other elms nearby if the wood is not used before the beetles emerge from overwintering. To minimize this problem, remove the bark to facilitate further desiccation of wood, overwintering bark beetles and fungus.

Reports indicate that the wood is difficult to split and may present a problem in initial lighting. It is considered as having low to medium BTU value. For example, one cord of air-dried American elm would have equivalent energy of about 0.4 ton of coal or 103 gallons fuel oil.

Microbes and nitrogen fertilizer

Problem: *Recently, I bought a product that contained microbes which supposedly make nitrogen fertilizer when applied to the soil. Is it true if I use this there is no need to apply any other fertilizer? (New York)*

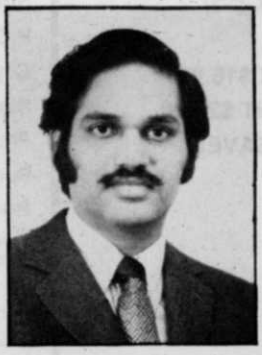
Solution: Higher plants primarily absorb nitrate or ammonium nitrogen for growth and development.

In nature, there are some microbes that can "fix" nitrogen and convert it to ammonium or nitrate for plant use. Certain soil inhabiting bacteria and blue-green algae can fix nitrogen. You might have also heard of the nodule-making bacteria in legumes which can fix nitrogen. Remember that not too many plants in nature have this ability. Therefore, I am not sure whether the product you have can fix enough nitrogen to support plant growth since nodule development is dependent on plant species, proper moisture, pH and temperature of the soil.

Silvex use still pending

Problem: *How effective is 2,4-DP against hard to control weeds like oxalis, ground ivy, violets and wild onion? Is there any chance that silvex will be available soon for use on lawns? (Pennsylvania)*

Solution: 2,4-DP provides acceptable control of the weeds mentioned except for violets. Silvex cancellation hearings are still proceeding and, at the present time, no decision has been reached regarding its status for use on home lawns.



Balakrishna Rao is plant pathologist and Thomas Mog is pest management specialist for Davey Tree Expert Co., Kent, OH.

Questions should be mailed to Problem Solver, Weeds Trees & Turf, 7500 Old Oak Boulevard, Cleveland, Ohio 44130. Please allow 2-3 months for an answer to appear in the magazine.

WOODS New Compact Backhoes... the sure-footed way to dig in!

The new Woods Models 650 and 750 utility backhoes can outperform others their size (and larger) digging footings, irrigation ditches, drainage ditches, wiring trenches, and for landscaping.

They offer control . . . and safety. Two lever control of all functions: reaching, digging, lifting, swinging and dumping. It couldn't be easier. And Woods' exclusive "Saf-T-Lok®" mount which eliminates side-to-side free-play movement of the 3-point hitch, their wide stance cantilevered stabilizers, and their self-contained independent hydraulics make sure they go where they're put . . . and stay put. Woods' 162° bucket curl gives maximum breakout and full "bite", keeps material in the bucket, and tucks away for safe convenient transport between jobs. The operator platform, with adjustable seat, puts him where he can see his work, and perform safely and comfortably.

And they give a choice. Model 650 reaches 7'10" and will dig 6'6" deep from tractors rated 18-35 hp with standard category 1, 3-point hitch. Model 750 reaches out 9'4" and down 7'6" from 20-40 hp tractors.

Get the "full scoop" on these top performers today. Send for complete specifications.

WOODS®

Division of Hesston Corporation
Oregon, Illinois 61061
for 35 years the name to remember for quality and performance

Circle No. 167 on Reader Inquiry Card

Balan® saves more money & more lawns.

Compare Balan® with any other preemergence herbicide, and you'll find there's not a more economical way to effectively control undesirable, troublesome weedgrasses like crabgrass, goosegrass, foxtail and others.

Balan or benefin is available in many formulations. Whether you choose a sprayable or a granular, you know you will get the same results—excellent weedgrass control at an economical price.

Effective turfgrass management doesn't have to be expensive. With Balan at work, both weedgrasses and your expenses tend to stop growing.

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Elanco Products Company, a Division of Eli Lilly and Company, Dept. E-455, Indianapolis, IN 46285, U.S.A.

JOBTALK

Truck pulls Texas Tree Shovel *with 40-foot-tall tree to new location.*

Moving big trees Texas style

The massive hydraulic tree spade can move trees with 24-inch trunks, 60 to 70 feet tall.

← Circle No. 171 on Reader Inquiry Card

Even Hurricane Alicia couldn't budge more than 1,000 large oaks in a housing development moved by the Texas Tree Shovel.

Tired of the labor costs and tedious root pruning associated with tree transplants? So was Al Korenek, who decided it was time to make transplanting easier for everyone.

Everyone would like to transplant full-grown trees and enjoy their aesthetic and protective values right away. But it's been easier to move younger specimens and wait for them to grow than moving mature trees with a huge ball of earth.

Korenek sat down and designed an all-hydraulic tree transplanter that can dig a cone-shaped hole 14 feet in diameter and 6 1/2 feet deep. The giant tree transplanter, dubbed the "Texas Tree Shovel," can handle 24-inch trunk diameters for trees 60 to 70 feet tall.

The patented system handles those massive root systems by pulling 10 pointed blades into the ground with hydraulic cylinders. The blades form a cone at the bottom of the hole and hold in roots and earth while three large hydraulic cylinders lift the tree and earth high enough for transport.

The shovel carries about 55,000 pounds of earth (not counting the tree) to the new site. A Mack tandem R 600 tractor powers the hydraulic cylinders and pulls the entire unit to the new planting site. In wet or unstable conditions the unit can be towed with a bulldozer or crawler loader coupled to a special tandem dolly using a fifth wheel.

Vermeer Manufacturing of Pella, IA, built and marketed the first shovel last January. It was put to the test that same month on Texas Arbor Day in Houston, where the Texas firm of Instant Shade Trees, Inc., moved a 20-inch caliper live oak tree.

The Texas Tree Shovel then moved on to Hanna-Barbera Land, where it transplanted several mature trees from neighboring property to strategic locations throughout the park. Ground conditions were so unstable in some areas that bulldozers were used to position the unit, but the results were successful.

The Texas Tree Shovel has also been used successfully to transplant 1,000 5-1/2 to 6-inch caliper live oak trees in a housing development. To date, all the trees survived and thrived after the move. Even Hurricane Alicia couldn't touch the new plantings, as they all withstood the high winds without support lines or other precautions.

While the first projects proved Korenek's invention worked, he also designed it to work anywhere. The 27-foot wide shovel can be dismantled and transported on two trailer trucks to any site in the country. The unit can also be assembled and used on the same day. **WT&T**

And more golf courses.

The toughest battle on the golf course doesn't always involve the players. Sometimes it's the golf course itself versus weeds. Fortunately, turf managers and superintendents have an ally—Balan® preemergence herbicide.

Balan takes on the toughest annual weedgrasses like crabgrass, goosegrass, poa annua, and foxtail as well as any herbicide around. Yet it's still one of the most economical. And it's gentle to your turf. With those kind of credentials, it's easy to see why Balan's popularity continues to grow each year.

Golf course management isn't complete without economical, effective weedgrass control. And with Balan, that's par for the course.

Balan™

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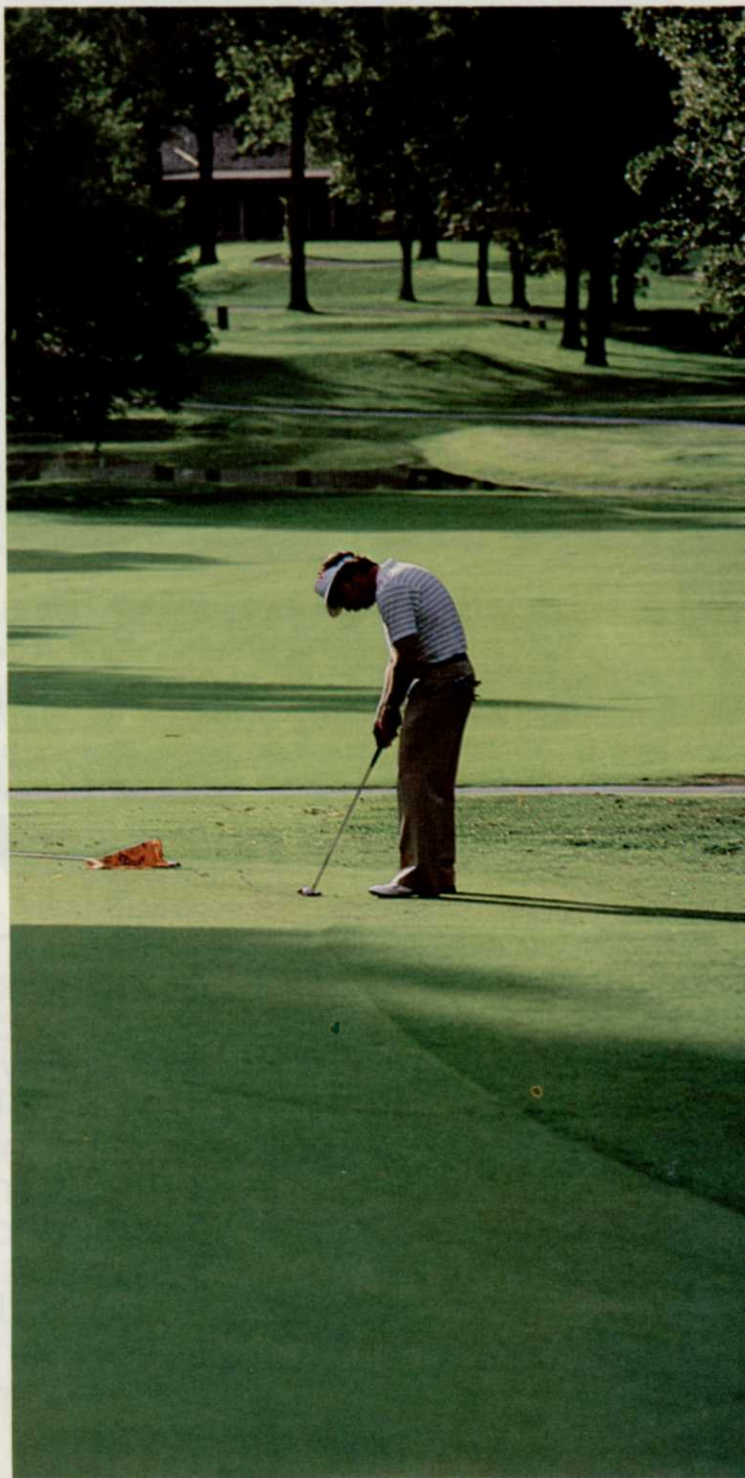

Circle No. 172 on Reader Inquiry Card →

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GOLF COURSES, PARKS, CEMETERIES, AND CAMPUSES. ALL PROVING GROUNDS FOR THE GT-7 TURF TRUCK.

Whether you're hauling, aereating, seeding, top dressing, or spraying, the GT-7 is fully equipped to handle the job. That's because E-Z-GO has been constantly changing, improving and upgrading the GT-7 until it literally suits any of your grounds maintenance functions.

E-Z-GO, the world's largest manufacturer of golf cars and utility vehicles, is backed by Textron, Inc., a major multi-industry manufacturing company.

The sheer number of service personnel in the field insures that users of E-Z-GO products get the service they need, when they need it.

Aside from giving you steel's strong durability, and a 1500 pound payload capacity, the heavy-duty GT-7 is an all purpose turf truck with a number of accessories and options.

For the name of your nearest distributor and information on the GT-7 or any other E-Z-GO vehicle, write or call:

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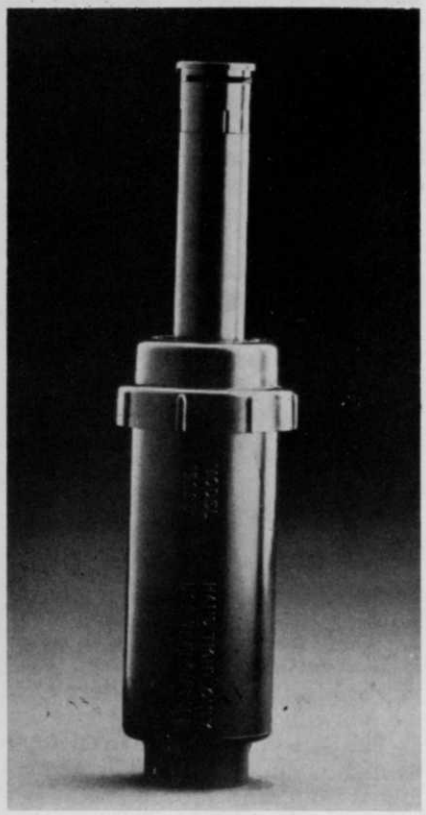
TEXTRON

P.O. Box 388, Marvin-Griffin Road
Augusta, Georgia 30913-2699.
(404) 798-4311

Circle No. 117 on Reader Inquiry Card

Spring-loaded sprinklers replace spray heads

The Royal Coach/Buckner 132 series of spring-loaded plastic pop-up sprinklers is designed to replace spray heads and risers. The 3, 6 and 12-inch sizes can be easily installed in most lawns, ground covers and grasses. The



taller models can be used in place of risers and are in view only when operating. This can reduce the chance for vandalism to the sprinkler system. The sprinklers also include a filter that can be cleaned by removing only the nozzle instead of the entire assembly. They are available with either brass or plastic balanced flow nozzles with a flow adjustment screw for water conservation.

Circle No. 175 on Reader Inquiry Card

Olathe introduces portable spot sprayer

The Olathe Model 10 Portable DC powered spot sprayer is ideal for spraying herbicides and insecticides. It can be attached to any 12-volt vehicle. Specifications are: Chemical resistant 10-gallon tank; 12-volt DC Pump (5 to 7 amp) 2.5 gallon/min at 30 psi. EPDM Rubber Hose 10 ft. std. Eighteen-inch hand gun with adjustable tip. Dimensions are 36 inches long, 12 inches wide and 15 inches high.

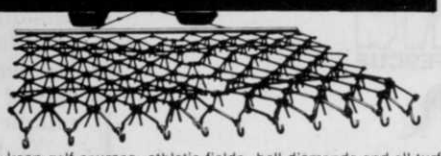
Circle No. 176 on Reader Inquiry Card

Trojan golf batteries are pounds lighter

New golf cart batteries from Trojan Battery Co. improve cart performance with no loss of charging capacity due to new design standards. The heavy-

KEEPS TURF in top condition

Low-Cost FUERST F-L-E-X-I-B-L-E TINE HARROW®



The proven low cost way to keep golf courses, athletic fields, ball diamonds and all turf areas in top condition. Crumbles and scatters cores without clogging, brings up thatch, prepares seedbed without disrupting existing growth. Areates to stimulate growth, scarifies to improve moisture penetration. Works in seed and fertilizer, maintains cinder tracks. 4 to 24 ft. Adjustable penetration. No maintenance.

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Circle No. 119 on Reader Inquiry Card

Get the performance you want.

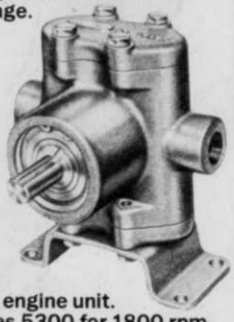
Hypro pumps deliver the pressure to put spray where the pests are. The output to help you work fast. A choice of pumps to match your equipment. And the reliability to keep your equipment in business.

If that's the kind of performance you want, get in touch with America's pump leader. Send for your free Hypro pump catalog now.

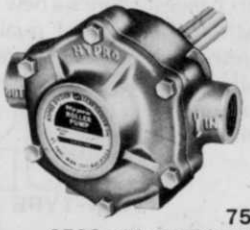
Engine Units

Complete and ready for work: efficient 3 or 5 HP gear-reduced gas engine, rugged Hypro piston or roller pump and steel base plate, all in one compact package.

Piston Pumps



For high pressure applications, pick the Series 5200: pressures to 400 psi, outputs to 10 gpm, with or without engine unit. Or get the Series 5300 for 1800 rpm drive, pressures to 500 psi and outputs to 3 gpm.



Roller Pumps

For high output, get the Series 7560 or Series 6500 with or without engine unit. You'll get outputs to 22 gpm, pressures ranging up to 300 psi. For lower output, pick the Series 4000/4100: maximum output is 9 gpm, maximum pressure to 150 psi.

Hypro®
A DIVISION OF LEAR SIEGLER, INC.
347 Fifth Ave NW, St. Paul, MN 55112 • (612) 633-9300

Circle No. 123 on Reader Inquiry Card

duty T-105 saves 6 lbs. of weight while the standard T-90 is 2 lbs. lighter than its predecessor. Advanced plate design provides more surface area for a longer lasting charge. New seperators better retain active material in positive plates to prevent shedding and antimony transfer, two major causes of battery failure. A polypropolene case with fused cover seal makes the unit more crack and leak-resistant and an extra-large water reservoir reduces maintenance.

Circle No. 177 on Reader Inquiry Card

New herbicide handles wide weed spectrum

Weedone DPC post-emergent herbicide has just received EPA label clearance for use on turf. It combines two of the best-known broadleaf killers, 2,4-D and dichlorprop (2,4-DP) for broad spectrum control of both annuals and perennials. According to Union Carbide, Weedone DPC is also highly effective for controlling ground ivy, oxalis, chickweed and poison ivy as well as more common

weeds like dandelion, plantain and wild garlic. The new herbicide will be marketed as Clean Crop Weedone DPC through Balcom Special Products and Lesco Weedone DPC through Lakeshore Equipment and Supply Co.

Circle No. 178 on Reader Inquiry Card

Sidewinder 848 gives maximum serviceability

FMC Corporation has introduced the Sidewinder 848, a heavy duty cutter which requires minimum maintenance and provides maximum ser-

viceability. It is the only cutter on the market without a gearbox.

The Sidewinder comes in 66, 72 or 84 inch width in lift or pull versions and is built with proven FMC engineering and performance.

Circle No. 179 on Reader Inquiry Card

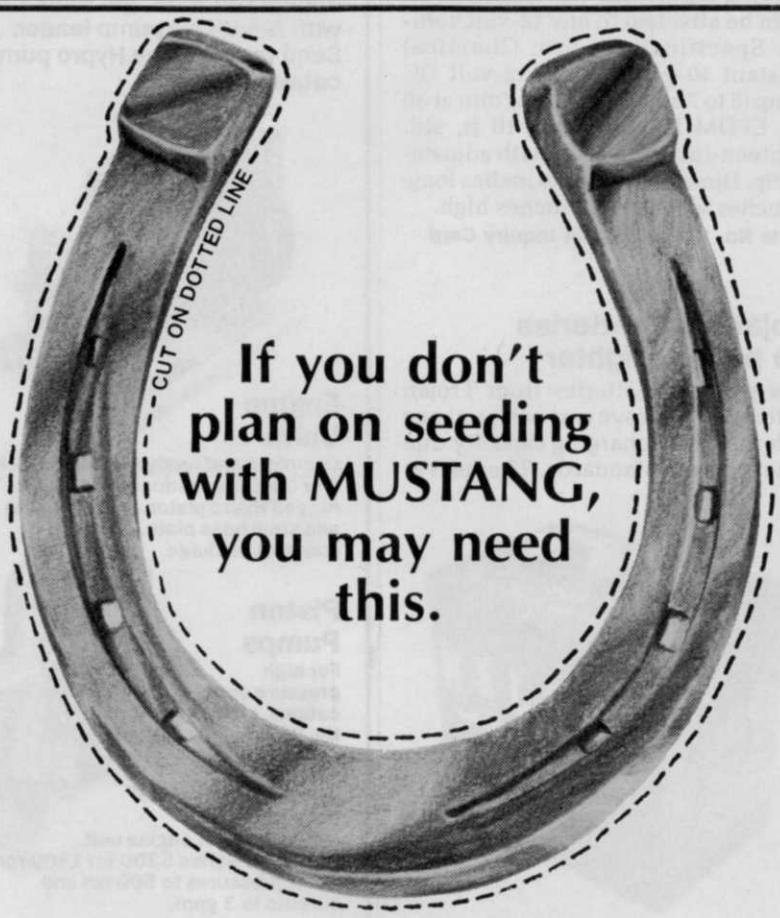
Doggett introduces five new tree fertilizers

The Doggett Corporation has introduced five different tree foods.

XL-Injecto Feed 32-7-7 is a high nitrogen analysis with 59 percent of the nitrogen slow release in the form of Powder Blue Nitroform. The remainder of nitrogen is 100 percent soluble and immediately available to the tree. Recommended use is in early spring at bud break through early-middle summer.

XL-Injecto Feed 12-24-24 is a low nitrogen product with 50 percent of the nitrogen from Powder Blue Nitroform; the remainder, 100 percent soluble. It is higher in phosphorous and potash. This formulation was designed to be applied at that time of the year when the tree or shrub is

continued on page 78



If you don't plan on seeding with MUSTANG, you may need this.

Why take chances? There's a new tall fescue whose superior turf quality, disease resistance and dark green color make it a breed apart from the others.

Mustang's high seedling vigor and excellent heat and drought resistance make it the one you can bet on. So, don't try your luck—try Mustang.

MUSTANG
TURF-TYPE TALL FESCUE

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Call or write for the distributor nearest you.

Circle No. 138 on Reader Inquiry Card

HUSTLER'S famous drive-wheel steering outmaneuvers all of the rest and increases productivity by reducing time, labor and fuel costs!

Productivity is the key in today's economy. And productivity is why HUSTLER's drive-wheel steering feature has become so famous.

Pioneered by Excel engineers, HUSTLER dual hydrostatics and drive-wheel steering have proven to be the best drive system concept in the industry for maneuverability, traction and serviceability.

Dual hydrostatics provide better control for a quick, smooth response to your command for forward, reverse, turning, braking and speed requirements.

Independently driven drive-wheels counter-rotate, permitting a HUSTLER to actually turn 360° within its own radius! Now that's maneuverability you can't find on conventional steering wheel models. And, with that kind of maneuverability, you can easily mow around obstacles, make square corner turns or speed down straightaways and never miss a blade of grass.

On a HUSTLER, you sit over the pivotal axis of the drive-wheels where **weight distribution** is best for balance, comfort and traction. You'll never suffer the **fatigue** normally associated with the body twisting and tossing of conventional mowers. This position also gives you 20/20 vision of both the attachment and terrain.

Yes, **HUSTLER's drive-wheel steering is what maneuverability** is all about. A HUSTLER lets you get the job done faster and better. A HUSTLER reduces operator fatigue and trimming requirements. A HUSTLER saves you additional labor and fuel costs. **In a word, that's productivity!** And productivity is what makes HUSTLER...worth the difference!

EXCEL HUSTLER Turf & Grounds Equipment

GS-07S-07691

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Select from six HUSTLER models, 18- to 32-hp and a host of attachments to meet year-round needs.

EXL-2-184

Circle No. 116 on Reader Inquiry Card

approaching dormancy. This fertilizer is low in nitrogen to avoid forcing new growth that would not harden off before winter, causing burn and dieback.

XL-Injecto Feed 5-30-30 is very low in nitrogen and very high in phosphorous and potash. This product was designed for situations where there is a very high deficiency of those two elements and for root stimulation in stressed situations or transplanting. It should be used only under extreme conditions. The manufacturer warns the full usefulness and effectiveness of this product still holds some question and applications of it are under observation.

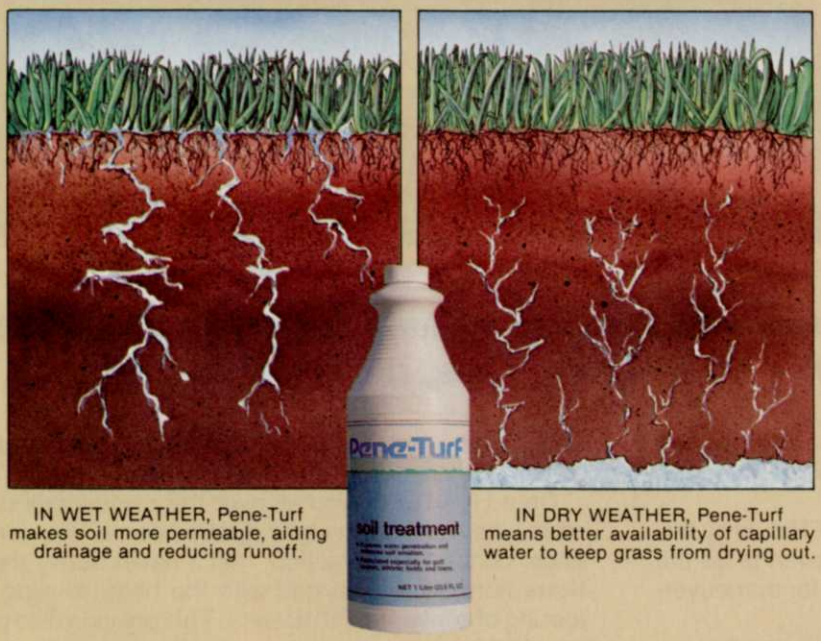
XL-Spray-Fol 30-10-10 is one product designed for the tree care industry that is 100 percent soluble, having no slow release. The manufacturer suggests using this product in the spring and summer in conjunction with insecticide spray applications. It will enhance the appearance of these applications through quick green-up, from nitrogen being absorbed directly through the leaf. See manufacturer's directions before applying.

XL-Evergreen Special 30-7-10 was designed for evergreen trees, plants and shrubs. It is a soil acidifier with additional iron added for good color and health. It is for soil injection at the root area and contains approximately 30 percent slow release nitroform in its 30 units of nitrogen. This fertilizer is chloride free, low salt and has micronutrients.

Circle No. 180 on Reader Inquiry Card

Wet or Dry

Get the Pene-Turf Advantage For Less Than Half the Cost.



IN WET WEATHER, Pene-Turf makes soil more permeable, aiding drainage and reducing runoff.

IN DRY WEATHER, Pene-Turf means better availability of capillary water to keep grass from drying out.

Hundreds of professional turf managers across the nation know the benefits of Pene-Turf Soil Treatment...improved permeability and aeration in the soil...better rooting, drainage and chemical incorporation...elimination of isolated wet and dry spots and protection against erosion.

But the best fact is the cost. For less than the cost of treating only greens with similar products, you can treat the entire course with Pene-Turf. It's the most cost-effective weapon you have against all kinds of soil and soil water problems.

Find out for yourself...write today for more information, or call TOLL-FREE, 1-800-348-2608. Distributor inquiries invited.

Distributors: Circle No. 165 on Reader Inquiry Card

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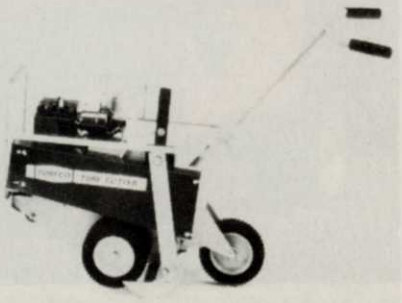
Toll-Free: 1-800-348-2608

Indiana: 219-824-5384 Collect

Circle No. 164 on Reader Inquiry Card

New turf cutter has one-third fewer parts

A self-propelled sod cutter powered by a 3-HP industrial/commercial engine is now available from Turfco Mfg. of Minneapolis. The Model A



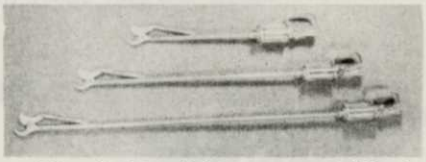
cuts 12-inch wide and 3/4-inch thick sod at speeds up to 75 feet-per-minute. Weighing 140 lbs. and operated by a single clutch lever, the sod cutter has one-third fewer parts for simplified maintenance. A removable handle makes storage and transportation easy.

Circle No. 181 on Reader Inquiry Card

Bud-Air pruner sports '84 improvements

The new "Bud-Air" air-powered pruner from Friend features an all new handle guard in addition to numerous strength improvements.

The specially-hardened blade and hook hold a sharp edge longer. Power shaft and link arm design extend tool life and reduce maintenance.



The lightweight compact "Bud-Air" design makes it easy for the operator to make more cuts with less effort. This is especially important within the main canopy of the tree where manueverabilty is important. Only one small 1/4 inch air hose is

What's your professional I.Q.?

Grab a pen and take this quick quiz of your professional knowledge.

1. You're faced with a variety of insect problems in the same location. Sod webworms are attacking turf. Beetles are destroying flower beds. And tent caterpillars are defoliating trees. What should you do?

a. Use three pest-specific insecticides, making sure to clean your spray tank between applications;
b. Spray a pesticide specifically formulated for tent caterpillars and hope it controls the other insects, too;
c. Apply a broad-spectrum insecticide that's labeled to control these and more than 210 other problem pests.

2. A wooded lot is being attacked by elm leaf beetles. But this area is also home for several species of birds and other wildlife. What's your best course of action?

a. Use a highly toxic chemical, but exercise caution when spraying;
b. Refrain from spraying and hope the defoliation is minimal;
c. Spray a selective insecticide that's highly toxic to target pests, yet registered for insect control on pests, poultry and even game birds.

3. During hot summer weather, your employees don't like to wear bulky safety equipment while applying insecticides. What can you do?

a. Demand that they wear respirators and other protective gear, even if it is uncomfortable;
b. Allow them to apply highly toxic chemicals without these safeguards;
c. Use an effective insecticide that can be applied without special protective clothing.

4. It's late summer, and fall webworms have become a serious problem. But in the area you're spraying are some sensitive flowers and shrubs. How would you handle this situation?

a. Use an insecticide labeled for use on trees, hoping that any run-off does not injure the flowers and shrubs;
b. Take time to cover the flowers and shrubs with plastic sheeting, then proceed with your spraying;
c. Apply an insecticide that's broadly registered and phytotoxic to only three types of plants (Boston ivy, Virginia creeper and Maidenhair fern).

5. It's the peak of the insect season and you have to protect a wide variety of trees, turf, shrubs, ornamentals and flowers from damage. But how can you control insects on all these plants?

a. Use several different insecticides, each formulated for specific plants;
b. Treat everything with a tree and shrub spray, hoping that this product does an adequate job on turf, flowers and other plants;
c. Select an insecticide that's broadly registered for use on most types of trees, turf, ornamentals, shrubs and flowers.

6. You're scheduled to spray for Japanese beetles today, but there's a problem. A church gathering will be held near the spray site. What can you do to minimize offensive odor?

a. Proceed with the spraying and hope the odor of your insecticide dissipates before the church function begins;
b. Postpone your application until later in the week and run the risk of further insect damage;
c. Use an insecticide that's virtually odorless, but also highly effective against Japanese beetles and other damaging pests.

7. As a grounds maintenance professional, you have access to a number of different insecticides. But what criteria should you use in selecting these products?

a. Use agricultural insecticides, since these chemicals are formulated for large-volume users;
b. Opt for home and garden products, since many of the pests you encounter are also found in residential areas;
c. Choose a compound that was developed and labeled for use by grounds maintenance professionals.

8. Due to a warm, wet winter, infestations of several insect species are expected to be severe. How can you control all these pests and inventory costs, too?

a. Stock several pest-specific insecticides;
b. Wait until an outbreak occurs to order your insecticide;
c. Make sure you have a broad-spectrum insecticide on hand to handle most of your pest problems.

As a grounds maintenance professional, many factors affect your choice of pesticides. Broad-spectrum insect control. Environmental protection. Your workers' safety. Phytotoxicity of pesticides to various plants. The offensive odor of many chemicals. Versatility of the products you buy. How an insecticide answers your specific needs. And the high cost of inventory.

These important factors make "C" the right answer to all eight questions. And all these features make SEVIN carbaryl insecticide the right answer to your insect problems.

So when it's time to order your pesticides, ask for the all-in-one professional insecticide from Union Carbide.

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SEVIN is a registered trademark for carbaryl insecticide. As with any agricultural chemical, always follow instructions on the label.

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Circle No. 153 on Reader Inquiry Card

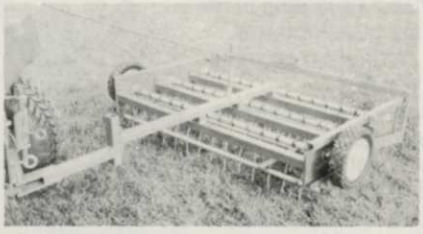
required to power the pruners. Using recommended operating pressure of 90-130 psi, the "Bud Air" uses three to four CFM air (under average use).

The simple strong design allows the operator to perform his own adjusting and maintenance on the job. "Bud Air" tools are available in 26 inch, 36 inch, 54 inch, 72 inch and 96 inch overall lengths. "Bud Air" 3-point tractor mount PTO driven and engine driven air compressors are available in 8 cfm, 18 cfm and 30 cfm.

Circle No. 182 on Reader Inquiry Card

Tine Rake boasts approved efficiency

A patented design based on the hand rake makes the Tine Rake more efficient than other methods of dethatching, aerating and loosening imbedded mulch, according to the Tine Rake Co. of Rayton MO. The tines face in the direction of travel, placing tension on them to control raking depth. Available in both front- and rear-mount models, the device attaches easily to riding mowers and tractors with 8-HP or more power.



Circle No. 183 on Reader Inquiry Card

Vibratory plow from Ditch-Witch

A compact lawn plow than can travel through a 36-inch gate is now available from Ditch-Witch for burying service lines without trenching. The V252 has four-wheel drive and power steering and features a four-weight vibrator plow with unitrolly assembly. Blade options allow installations with cover from 10 to 13 inches for electric, telephone and television cable and plastic pipe.

Circle No. 184 on Reader Inquiry Card

Farmtrim 450 handles the slopes

Grass, brush and shrub up to 1-1/2 inches thick are no problem with the new Farmtrim 450. Designed for municipal use, the reach-type mower attaches directly to the three-point linkage of tractors with 35 or more horsepower without special brackets. A hydracushion flotation system helps the cutting head follow uneven ground and guaranteed-unbreakable flails are standard equipment.

Circle No. 185 on Reader Inquiry Card

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NOW!
A complete line of Diazinon products—Emulsifiable Concentrates, Granules or Wettable Powder—with complete labeling for turf and ornamental insect control, available through more than 40 distributors nationwide. Call or write for the distributor nearest you.
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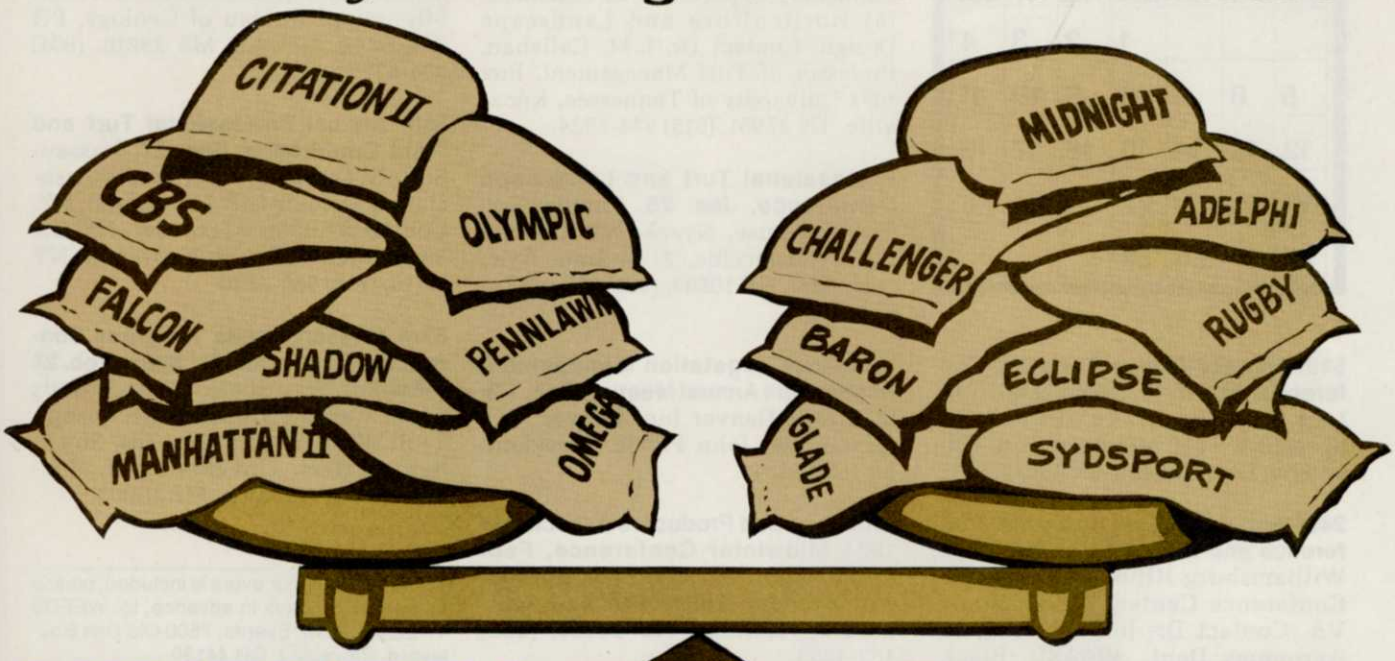
Circle No. 139 on Reader Inquiry Card

COLUMBIA

balances your turf grass blend or mixture



MIXTURES BLENDS

Columbia qualifies for Turf-Seed's blue tag award program. Ask your distributor for details.

COLUMBIA
Kentucky Bluegrass

Produced and marketed by

TURF-SEED
Turf-Seed, Inc.

P.O. Box 250
Hubbard, OR 97032
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TWX **510-590-0957**

Columbia produces quick, dense, quality turf for better profit

For over 15 years **Columbia Kentucky Bluegrass** has built a reputation as the backbone of quality sod mixtures around the country. With Columbia's resistance to Fusarium blight, you'll often find it where other bluegrasses fear to grow. Its overall disease resistance gives your blend or mixture balanced performance throughout the year.

Columbia produces strong, vigorous seedlings that develop into dense, dark green, rapid spreading turf with excellent sod strength. This ensures a quick sod turnover.

Columbia is a consistent performer that has topped turf trials in Manhattan, Kansas; Hubbard, Oregon; Urbana, Illinois; and Santa Ana, Camarillo and San Jose, California.

Circle No. 151 on Reader Inquiry Card

EVENTS

FEBRUARY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

54th Annual Michigan Turfgrass Conference, Jan. 17-18. Lansing, MI. Contact Paul E. Rieke, Extension Specialist, Turf, Michigan State University, East Lansing, MI 48824.

24th Annual Virginia Turfgrass Conference and Trade Show, Jan. 18-20. Williamsburg Hilton and National Conference Center, Williamsburg, VA. Contact Dr. John R. Hall, III, Agronomy Dept., VPI&SU, Blacksburg, VA 24061-7294. (703) 961-5797.

Turf and Grounds Maintenance Short Course, Jan. 23-25. University of Tennessee Department of Ornamental Horticulture and Landscape Design. Contact Dr. L.M. Callahan, Professor of Turf Management, Box 1071 University of Tennessee, Knoxville, TN 37901, (615) 974-7324.

Professional Turf and Landscape Conference, Jan. 25. Tappan Zee Towne House, Nyack, NY. Contact Dan Antonecchia, 21 Jackson Ave., Scarsdale, NY 10583, (914) 723-1677. February

Industrial Vegetation Management Association Annual Meeting, Feb. 1-3. Stouffer's Denver Inn, Denver, CO. Contact Dr. John Pickle, President, (913) 539-4241.

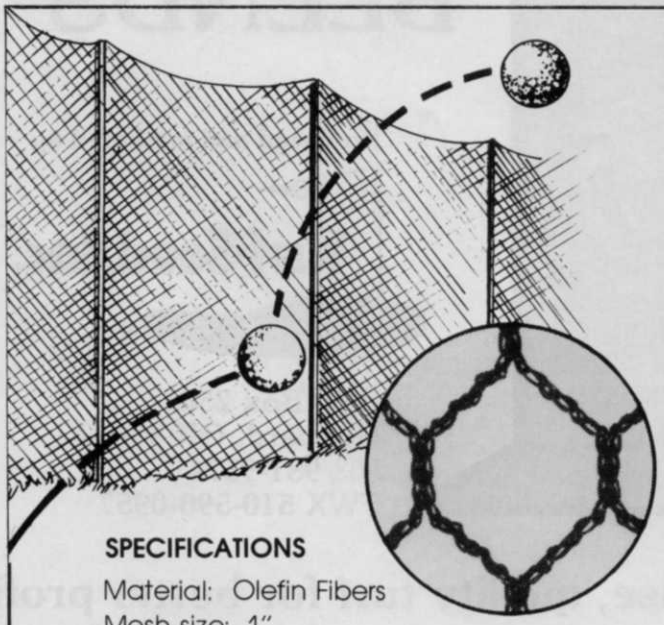
American Sod Producers Association 1984 Midwinter Conference, Feb. 21-23. Hilton Riviera, Palm Springs, CA. Contact ASPA, 9th and Minnesota, Hastings, NB 68901, (402) 463-4683.

Mississippi Erosion Control and Land Reclamation Seminar, Feb. 21-22. Holiday Inn Southwest, Jackson, MI. Contact Robin Borden, agronomist, Mining and Reclamation Section, Mississippi Bureau of Geology, PO Box 5348, Jackson, MS 39216, (601) 354-6228.

16th Annual Professional Turf and Plant Conference, Feb. 27. Nassau-Suffolk Landscape Gardeners Association, Colonie Hill, Long Island, NY. Contact William Alexander, NSLGA 59 Orinico Drive, Brightwaters, NY 11718, (516) 665-2250.

53rd Massachusetts Turfgrass Conference & 8th Industrial Show, Feb. 28 - March 1. Springfield, Massachusetts Civic Center. Contact Dr. Joseph Troll, Plant & Soil Sciences, Stockbridge Hall, University of Massachusetts, Amherst, MA 01003.

To insure that your event is included, please forward it, 90 days in advance, to: WEEDS TREES & TURF Events, 7500 Old Oak Boulevard, Cleveland, OH 44130.



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IBDU is available only in PAR EX® fertilizers. PAR EX products feature IBDU mixed in a variety of formulations designed to satisfy your turf and soil conditions.

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Circle No. 205 on Reader Inquiry Card

MULTI-COURSE *from page 34*

issue." Proposition 13 in California cut public funding in many areas. It may be part of the reason for the success of contract golf course maintenance there.

AGC's Vice President Bill Brown recently annnounced formation of a "golf club" to spur rounds at 22 of its golf courses in California, Nevada and Arizona. For a $48 membership fee, golfers get a free round at any of the courses including preferred tee times and tournaments. Marketing the game of golf is one of the most difficult tasks for an owner or municipal course. AGC is using marketing tactics similar to those used by American Express and Diner's Club to increase revenues.

"We're finding group buying a great benefit to our clients," says Epchells with Golf Turf Inc." We specialize predominantly with newer golf courses and developers. We help them get established and then follow up with group buying and operational problem-solving."

The future of multis

The case for multi-course management is economic. Beside groups with ten or more courses, are many more with two or three courses. Many of these are owned by developers who built the courses to serve as the centerpieces for recreational communities. These developers eventually try to sell the golf course to the owners of the condominiums or homes in the development. Failing this, they seek other options.

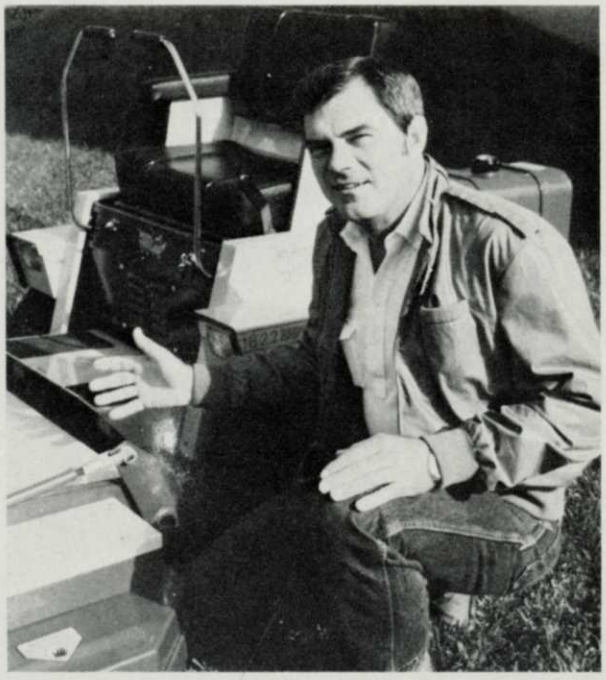
Companies which once found owning a golf course prestigious, are also tempted by ways to lighten their burden. Municipalities faced with tight-fisted taxpayers and growing problems with basic services, labor, and schools, may be anxious to cut their loses and reduce management headaches by leasing their courses to multi-course operators.

Even the private golf club, disappointed with superintendents and afraid to raise dues, may try contract maintenance or a consulting organization.

Of course, consulting is available from other sources, especially the United States Golf Association Green Section. The certification program by the Golf Course Superintendents Association of America can help superintendents document competence if needed.

The real foes of individual superintendents are management, labor problems, and size. To match the expertise and cost savings of multi-course operators, superintendents will require strong association and extension support, buying groups to gain quantity discounts, and a greater knowledge of managing and marketing their course.

It will be more difficult to stay a "greenskeeper" and leave the operation of the course to the club manager and the golf professional. Recreation is now a business and the superintendent will need to become a businessman as well as a skilled landscape manager to guard his future. **WT&T**



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Introducing the MC-3S Satellite Controller System from Rain Bird.

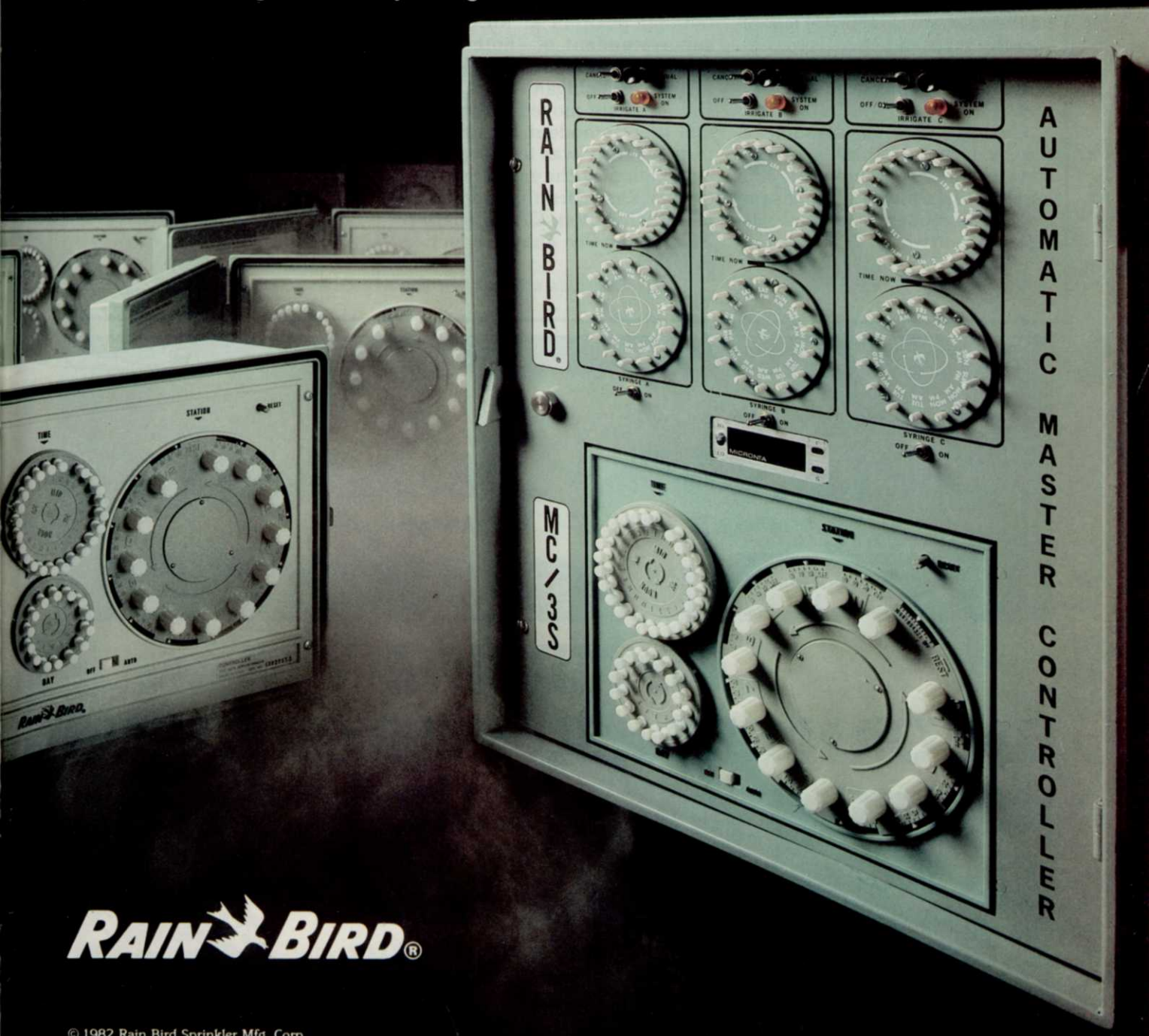
Based on two of the industry's most reliable controllers ever — the Rain Bird RC-1230 and RC-1260 — our MC-3S system combines flexibility and economy like never before. The best of both worlds.

It starts with three Turf Irrigation Start Clocks, with seven-day calendars and 1/2 hour starts. Add an RC-1260 type controller module that provides syringe times of 0 to 10 minutes. Next, up to 75 — that's right, 75 satellites, each one capable of handling up to 12 separate stations from greens to fairways to roughs.

The MC-3S system doesn't stop there, though. You'll also find plenty of Rain Bird extras to help make your job just a little bit easier. Extras like a digital clock that shows time of day. A flashing, loss-of-power display. Satellite pump starts. Manual override switches for each of three satellite groups. Pedestal mount flexibility.

It's a satellite controller system that gets the job done fast and effectively.

For complete information see your Rain Bird dealer, or write: Rain Bird Sales, Inc. • Turf Division, 145 North Grand Avenue, Glendora, California 91740.



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Circle No. 217 on Reader Inquiry Card

MILWAUKEE *from page 50*

year to predict other problems and needs.

The golfization of turf grads

When Quast graduated from the University of Massachusetts turf program he knew little about becoming a superintendent. Leo Cleary, brother of W.A. Cleary of Somerset, NJ, hired Quast to work on the company course. He taught him the ropes of being a superintendent. Now Quast tries to do the same thing for recent turf graduates at MCC.

Each year Quast meets some of the best turf graduates in the country when he attends state and national turf shows and teaches at Jacobsen's student seminars. He picks one or two at a time to learn the ropes at his course. After two years they are ready to be superintendent almost anywhere says Quast.

Steve Blendell, a graduate of the University of Massachusetts, recently left the assistant superintendent position at MCC to be superintendent of another Milwaukee area course. Mike van Sistine, a Michigan State University graduate moved up to assistant superintendent. His previous responsibility was to manage the installation of the new irrigation system. Karen Bruning, a graduate of ABAC, Tifton, GA, is quarterbacking the Poa annua reduction program.

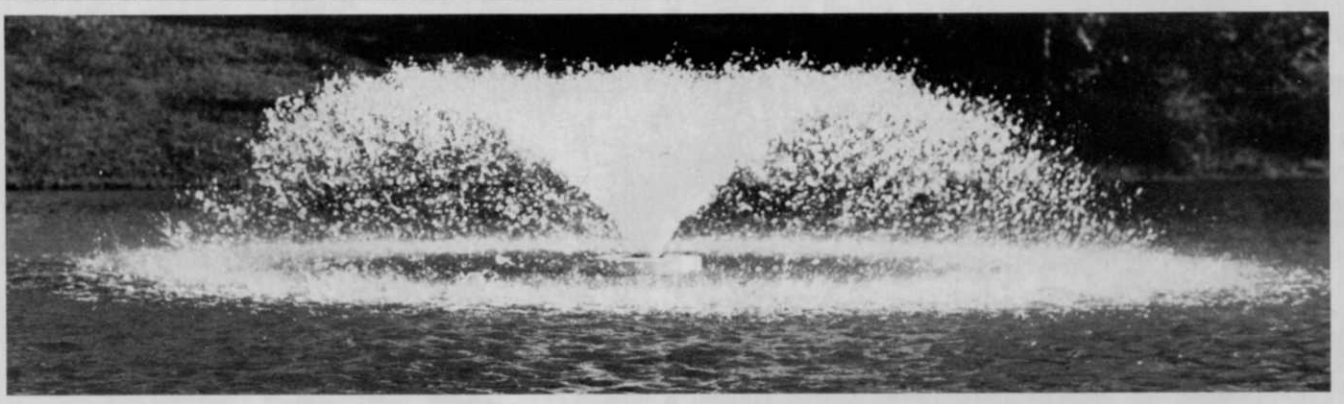
"No one chemical is a panacea for all turf diseases." Quast

Quast believes strongly in the GCSAA certification program for superintendents. He is also editor of the newsletter of the Wisconsin chapter of GCSAA. He knows that much is gained by working with other superintendents and with suppliers, such as the Jake HF-5 basket arrangement which is now on the market. He not only wants superintendents to think for themselves, but to think together.

WT&T

You can be in Jobtalk

If you have recently done an unusual or challenging job, we'd like to know. Write Weeds Trees & Turf, 7500 Old Oak Boulevard, Cleveland, Ohio 44130.



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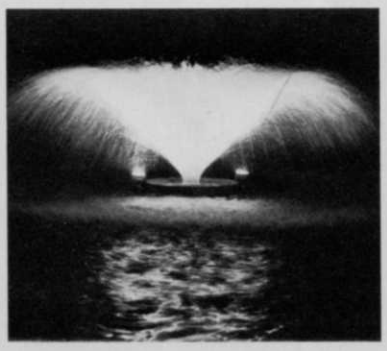
DAY OR NIGHT...SUMMER OR WINTER



OTTERBINE® Aerators can help you keep unsightly algal growth and objectional odors under control naturally. The fact that OTTERBINES also create beauty — is just one of the many benefits of using our Spray Sculpture™ Floating Fountains.

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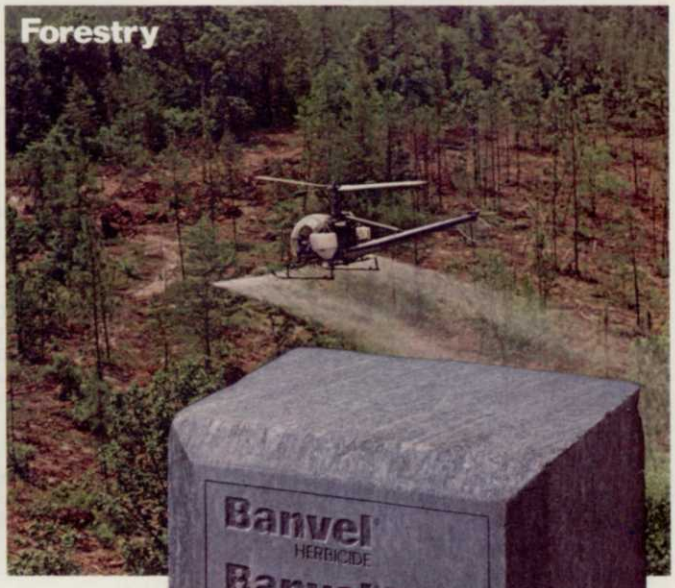

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WANT TO BUY OR SELL a golf course? Exclusively golf course transactions and appraisals. Ask for our catalog McKay Golf and Country Club Properties, 15553 N. East Street, Lansing,Michigan 48906. Phone (517) 484-7726. TF

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CLOSEOUT SPECIAL!Save your back issues of WEEDS TREES &TURF and save money at the same time. We're closing out our line of permanent binders at the special low price of *two for only $7.50!* (This is a $7.00 savings over our regular price plus postage and handling.) Orders will be filled as long as our supply lasts—quantities are limited. Order your binders today from: Book Sales, HBJ PUBLICATIONS, One East First Street, Duluth, MN 55802. TF

LAWN SEED. Wholesale. Full line of top quality grasses. Improved bluegrass varieties, fine fescues and fine blade ryegrasses. We specialize in custom mixing. Oliger Seed Company, 2705 Wingate Avenue, Akron, OH 44314. Call collect (216) 753-2259. TF

GREENSMIX —New or old const. Will blend material on job site for you, radius of 700 miles. Large Royer—S.D.I., P.O. Box 2611, Shawnee Mission, Kansas 66201. Phone (913)381-5151.

HYDROSEEDERS - MULCH SPREADERS - When looking for a good quality used Hydro-Seeder or Mulch Spreader at an affordable price, call Finn Corporation and ask about our factory reconditioned and demonstrator models. Toll free 800/543-7166. In Ohio 513/871-2529. 3/84

1981 SPRAY UNIT FOR SALE. 600 gallon, dual compartment, SS tank; PTO driven Ford F350, dual wheel chassis. Immaculate condition. Call 201-240-9333. 2/84

STAINLESS STEEL COMBINES (2) - Seed, aerate, fertilize and apply weed and fungicide materials in one pass. Can buy one or both - with and without tractor. Trailers also available - many extra parts. Call 201-240-9333. 2/84

VERMEER TREE SPADE - TS44RH, Crawler mount, like new. Will consider cash or exchange for materials/services. Contact: Superintendent of Parks, (312) 420-4230. 1/84

For Sale: Five R-7 Motorized Rotary Spreader, 4 tires, live front axle, all under 100 hrs. $750.00 each - Turfgard Company, P.O. Box 618, Troy, OH 45373, 1-513-339-3835. 4/84

SOFTWARE FOR SALE: Tree & Landscape, Co. Multi-company General Ledger, Accounts Payable, Accounts Receivable, Payroll Order Entry/ Processing Transportation and Billing. Written for Prime Computers - Documented. **FOR INFORMATION CONTACT:** J. Hetzler at (716) 436-2900. 2/84

BOBCAT, BUNTON REPLACEMENT PARTS. Main drive belt list $25.00 our price $17.00. **DUMP CATCHER,** basket only $125.00. Shipping only $2.00 on any size order. Dealers wanted. Call or write for catalogue. Precision Power Equipment, 112 Temby St., Springfield, MA 01119, (413) 782-4114. 2/84

NEW TREE FERTILIZATION GUN, tested on over a million square feet of trees and shrubs all over the U.S. Good to 500 psi, repairable, non-corrosive. Buy direct from manufacturer, $89.50 + Shipping. Arbor-Nomics, Inc., 5634-A Buford Highway, Atlanta, Georgia 30071. (404) 447-6037. TF

FOR SALE: 1982 Bowie Hydro-Mulcher, 1,100 Gallon Tank, Goose-Neck Trailer, 200' Hose & Reel Assembly. For further information please contact: A & F, Inc., P.O. Box 290, Hendersonville, TN 37075, (615) 822-0101. 1/84

GREAT 700 Gallon Bean trailer sprayer with big Royal 55 pump - Best pump ever made - Superb outfit only $5800.00. 513-424-2052. 1/84

For Sale: Finn T80S, 900 gal. HYDROSEEDER, 50 hrs. on rebuilt engine, trailer mounted, excellent condition, $11,250.00. FINN Bantam Straw Mulcher, with asphalt applicator, excellent condition, $6500.00. Call George, 317-873-5231 days or 317-873-5937 even. 1/84

For Sale: 6 ft. Mott mower, $600.00, 4 ft. Giant Vac, $600.00, Champ CB-40 towable fork-lift, $6,500.00. All good cond. Phila. area. (215) 699-9151. 1/84

1976 Brouwer Sod Harvester. 2500 hours. Mint condition. Must see to believe! $17,500. 1982 Demonstrator Princeton - Piggy-Back 453 forklift. Perfect condition. $16,900. (303) 776-2300. 1/84

RYAN SOD CUTTER - 18" cut, w. cutoff. Newly overhauled, gears and bearings. Will ship. $1500. (406) 587-4858. 1/84

For Sale - Established sod farm in beautiful Western Colorado. 170 acres of sod plus equipment and 4 homes. Call (303) 858-7464 or write to Jim at 1268 18-1/2 Road, Fruita, CO 81521. 7/84

USED EQUIPMENT

Used Finn lawn feeder, 800 gal. w/hose, reel & spray gun. Reduced price; $3,000.00. (502) 782-2730, 1:00 pm - 4:30 pm. 1/84

Demonstrator Brouwer 5 Gang Reel Mower. C.J. Perry & Son, Inc., Gasport, N.Y. 14067. 716-772-2636. 1/84

TORO PARKMASTER TRACTOR with 7 Roughmaster Reels. Used only 730 hours. Excellent condition. BEGICK NURSERY AND GARDEN CENTER, 5993 West Side Saginaw Rd., Bay City, Michigan 48706. Phone (517) 684-4210. 1/84

For Sale — 1972 Ryan sod cutter with cut-off. Newly overhauled. Will ship anywhere! $950. 1978 New Holland skid steer loader. New bucket — new engine — new tires! $10,500. Heisel Landscape Nursery. (406) 587-4858. 1/84

NEW and USED EQUIPMENT Hi Ranger and Asplundh Forestry bucket trucks, Asplundh and Chipmore wood chippers, Stump Grinders, Log Splitters, Crane Trucks. Mirk Inc. (216)669-3567, (216) 669-3562, 7629 Chippewa Road, Orrville, Ohio 44667. TF

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HI-RANGERS AERIAL BASKETS 65', 57', and 53'. Skyworkers aerial baskets 65', 50', 40'. Vermeer stump cutter 1560,6. Vermeer tree spade 66, TS 44. Asplundh bucket and brush chippers, Bean sprayer, 9 ton trailer. Parkway Tree Service, 12026 W. Cherry, Wauwatosa, Wisc. 53226. (414) 257-1555. TF

HELP WANTED

Wanted - landscape foreman, project supervisor and designer, nursery manager - Must be hard working, aggressive and knowledgeable in all phases of Horticulture with 3 to 5 years experience. Nursery manager must have sound background. Good benefits. Send resume with references to Hudson's Landscape Nursery, 3609 Walton Way Ext., Augusta, Ga. 30909. 1/84

URBAN FORESTER - Opening to head Forestry Division of New Orleans; excellent salary and benefits; degree plus 1 year of supervisory experience required; send resume to New Orleans Parkway and Park Commission, 2829 Gentilly Boulevard, New Orleans, Louisiana 70122. 1/84

ARBORICULTURE-SALESPERSON ESTIMATOR - Experienced arborists needed for expanding Washington, D.C. metro area tree service co. Commission and/or salary negotiable. Co. vehicle and benefits. Send resume to Fairfax Tree Service, Inc., 3746 Chain Bridge Rd., Fairfax, VA. 22030. 1/84

LANDSCAPE MANAGER - a growing Great Lakes firm is looking for an experienced person to take control of day to day operations of this full service company. Must have extensive knowledge of all phases of landscape maintenance and construction. Duties include job bidding, selling maintenance contracts, dispatch and supervising crews. Excellent benefits including profit sharing for the right person. Send resume and salary requirement to: Nature's Way Landscaping, 15025 Hall Road, Mount Clemens, Michigan 48044. 1/84

General manager position open for chemical lawn and shrub division of established landscaping company in the sunbelt area. Tremendous opportunity for an aggressive individual having experience with a national or regional lawn care company. We are looking for a BUSINESSMAN — the very BEST!! Knowledge of turf grass, ornamental plants, and marketing needed. The right person will enjoy excellent salary, benefits, and opportunity for equity participation with unlimited earnings potential. Send complete resume including education, experience, and salary history. All replies will be kept confidential. Write WTT Box 325. TF

AD INDEX

BRANCH MANAGER AND ASSISTANT MANAGER - First class expanding company desires a Branch Manager and Assistant Manager for the Midwest and Southern markets. Applicants must have chemical lawn care experience. Excellent salary and benefits. Send resumes to WTT Box 332. 1/84

General Manager for pest control business. Responsible, qualified experience, positive performance required. Resume to Horticultural Service Center, 6609 Peacock Road, Sarasota, Florida 33581. 1/84

GOLF COURSE SUPERINTENDENT City of Dodge City, KS, seeks individual with excellent communication and public relations skills with a thorough background in turf management to manage its eighteen hole, eighty-eight acre Municipal Golf Course. Experience in personnel management, budget preparation and minimum 3 years supervisory experience required. Bachelor or Associates Degree in Turf Management desirable. Salary range - $16,155 to $21,000 based on experience. Send application to Personnel Department, 705 First Avenue, Dodge City, KS 67801 by January 20, 1984. Equal Opportunity Employer. 1/84

Help wanted - Landscape maintenance supervisor position available, Dallas/Fort Worth Area. Working knowledge of turf, plants, chemicals, and equipment required. Send resume to The Ground Crew, Inc., 3008 Pleasant Valley, Arlington, Texas 76015, Attn: Bill James. (817) 467-5888. 1/84

MANAGER: Position available as manager of private tree care division of large, well-established tree service company. Applicant must have well-developed sales and management skills, plus ability to expand existing operation. Mid-western location. Excellent salary and benefits with good opportunity for growth. Send resume outlining education, experience and salary requirements to WTT Box 331. 1/84

Horticulturist - Private Club 35 miles east of New York City on North Shore of Long Island, 300 plus acres. Experienced horticulturist to be responsible for the grounds and plantings at main clubhouse and five cottages. Work will interact with tennis and golf facilities. B.S. in horticulture or related field required. Must be familiar with insects and disease of ornamental plants and turf grass. Applicant should be capable of supervising others and possess good communications skills. Directly responsible to Grounds Superintendent. Excellent benefits. Salary commensurate with experience. Please send resume to: M.B. Lucas, Jr., Box 525, Locust Valley, N.Y. 11560. 2/84

LANDSCAPE MAINTENANCE SALES PERSON: Expanding, aggressive firm seeks sales representative for suburban Chicago market. Respondents must have experience in landscape maintenance on technical level as well as a sales background. Degreed person preferred. Send resume and salary history to: Manager, Route 2, Box 67, Elgin, Illinois 60120. TF

TREE AND SHRUB CARE — Branch Managers and Sales Managers. America's fastest growing tree and shrub care company seeking experienced, aggressive businessmen for existing and expansion markets. Experience, degree and motivation — key ingredients. Tremendous advancement opportunities. Excellent salary, benefits. All inquiries will be strictly confidential. Send resume, salary history to: Wm. Scott Carr, Tru Green Tree and Shrub Care, 2875 Northwind Dr., Suite 205, E. Lansing, MI 48823. Expand your potential with an industry leader. 2/84

LANDSCAPE MANAGER - a growing Great Lakes firm is looking for an experienced person to take control of day to day operations of this full service company. Must have extensive knowledge of all phases of landscape maintenance and construction. Duties include job bidding, selling maintenance contracts, dispatch and supervising crews. Excellent benefits including profit sharing for the right person. Send resume and salary requirement to: Nature's Way Landscaping, 15025 Hall Road, Mount Clemens, Michigan 48044. 1/84

URBAN FORESTER - Opening to head Forestry Division of New Orleans; excellent salary and benefits; degree plus 1 year of supervisory experience required; send resume to New Orleans Parkway and Park Commission, 2829 Gentilly Boulevard, New Orleans, Louisiana 70122. 1/84

WANTED

WANTED: Large Lindig and Royer Shredders. Lewis Equipment, 320 Third Street S.W., Winter Haven, FL 33880. (813)294-5893. 6/84

ACCOUNTS WANTED — National chemical lawn care company seeks accounts to acquire. Selling price open for negotiation. If interested, send name, address, phone number and number of accounts available to WTT Box 317. 3/84

Wanted: Brouwer Sod Harvester and Spider Fork Lift. Floyd Sumrall, Rt. 3, Box 506, Sumrall, MS. 39482. (601) 758-3510. 1/84

CHIPPERS WANTED and stump machines any condition. Will pay cash. Jim Kohler, 2330 Seneca Drive, York, PA 17404, 717-764-5103, 717-755-5307. 2/84

Wanted to buy **HYDRO SEEDER**. Please send photo. Johnson Hydro Seeding Corp., 13751 Travilah Road, Rockville, MD 20850, 301/340-0805. TF

POSITION WANTED

Chemical Lawn and Tree Manager—Seeks challenging management position for established chemical lawn and tree company in Florida. Six years experience, with extensive knowledge of turf grass, ornamental plants, and marketing. Resume upon request. Write WTT Box 319.

MISCELLANEOUS

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EDUCATIONAL OPPORTUNITIES

"Learn Sprinkler Irrigation: Professional Training" in Landscape Contracting - Golf Course Superintendents. Program 2 years - A.A.S. Degree, Western Texas College, Snyder, Texas 79549. 5/84

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ZOYSIA *from page 26*

by itself without extensive pre-emerge or post-emerge herbicide programs. It required little summer "pampering" and when fall frosts came it went dormant near the time play fell off anyway and besides, even dormant and off-color it still provided an excellent playing surface with practically no fall care.

No overseeding, no fall fertilization, no widespread herbicide treatments or even mowing -- it literally was one less turf area for the golf course superintendent to worry about when it went dormant.

Negative aspects

The negative aspects of zoysia management were far offset by the positive benefits. Even the problem of fall, winter and early spring color was solved by good communication programs with the golfers.

By stressing the advantages of lower short and long term fairway maintenance costs and zoysia's outstanding summer performance, even the average golfer realized that there was no perfect fairway grass for the transition zone, but, when all factors were considered, zoysia made the best sense and was probably the best compromise grass available.

There are some negative aspects of zoysia, namely cost and speed of the establishment program.

Zoysia is slow to establish when planted into existing stands of cool season grasses. Depending on the management program and the weather, it sometimes takes four to five years for the zoysia to spread and provide a good turf cover. Zoysia does not grow well in shade.

Its performance on shady tees and shady fairways is not very good.

Commercially-grown zoysia sod is expensive to purchase. Because Meyer zoysia must be established vegetatively either by stolons, plugging, row planting or strip sodding and most of these planting materials must at some time be purchased, establishment costs run high. The supply of zoysia sod is limited and the demand and cost of zoysia remain high.

Another area where zoysia does not perform well is when it is planted into any area contaminated with patches of bermudagrass. Generally, on a one-to-one basis, bermudagrass, because of its aggressiveness, will out compete and tend to dominate zoysia in a mixed stand. Only when winterkill is experienced on the bermudagrass or when a very careful and precise zoysia management program is followed will zoysia tend to dominate in a mixed stand with bermudagrass.

Zoysia is clearly not for all golf courses in all situations and careful consideration must be given before establishing any zoysia program. **WT&T**

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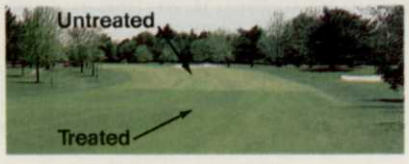
Circle No. 168 on Reader Inquiry Card

Put down the *Poa annua* seedhead uprising before it starts. Use Embark® PGR.

Tame *Poa annua* while it's young. Or it will grow to become a rebellious turfgrass, producing stiff seedheads that don't mow well, turning fairways oyster-white or a pale yellow, discoloring shoes, irritating allergies and generally making golfers uneasy. Not to mention course directors.

However, a little Embark PGR (Plant Growth Regulator) applied early in the growing season will keep *Poa* in its place.

Just one-half pint per acre arrests *Poa* seedhead development. And by preventing seedheads, root



systems are strengthened, summer vigor is increased, summer color is enhanced and early discoloration is minimized.

The result is a uniform, dense, attractive and long-lasting playing surface.

Embark PGR also controls the growth of other grasses. Use it to reduce mowing frequency on slopes, around trees and creeks, and other hard-to-maintain areas. Saves manhours and wear on mowing equipment.

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For more information, contact Agricultural Products/3M, 223-1N, 3M Center, St. Paul, MN 55144. Or see your local 3M Embark PGR distributor.

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Circle No. 170 on Reader Inquiry Card

Old GCSAA staff now runs all major turf associations

When I found out Doug Fender is the new executive director of the American Sod Producers Association, I had to chuckle (Christmas expression). I thought he severed his ties with turf when he left the Golf Course Superintendents Association of America five years ago to become public relations director of the Insurance Million Dollar Round Table.

Doug was director of communications under GCSAA Executive Director Conrad Scheetz. Jim Brooks, now executive director of the Professional Lawn Care Association of America, was also there at the time as conference director. Another former director of communications for GCSAA, John Schilling is now executive director of GCSAA. Our group publisher, Bob Earley, also worked for the GCSAA communications group with Doug and Jim.

So, the executive directors of the three primary turf associations in the U.S. and one turf publisher all passed through GCSAA on their way up. It's not exactly the Harvard Club, but the GCSAA Club plays a large role in the turf industry today.

There is something captivating about the turf industry, something that keeps us in it and brings us back when we leave. Welcome back Doug.

Turgeon, Bidwell join advisors

We are proud to announce that Al Turgeon, vice president and technical director of Tru-Green, and Warren Bidwell, well-known Chicago-area golf superintendent have joined the *Weeds Trees & Turf* Editorial Advisory Board.

Turgeon, who broke considerable research ground while at the University of Illinois and the Texas Agricultural Experiment Station in Dallas, TX, recently moved to East Lansing, MI, to help Tru-Green achieve its growth goals. He is definitely one of the top agronomists in the country.

Warren Bidwell recently retired as superintendent at Olympia Fields Country Club in Olympia Fields, IL. He is very active in Chicago-area and Midwest turf organizations. Recently, he traveled to Africa to visit golf courses and universities as part of the team searching for drought and heat resistant turfgrasses.

Both of these men are full of ideas and will, no doubt, help this magazine help you more. Of course, we like to hear from you too. Please write me anytime with your suggestions. In fact, if we use an idea of yours, we'll pay you $50. It pays to talk to *Weeds Trees & Turf*.

Bruce F. Shank

Bruce F. Shank, executive editor

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The New Trim King.

Greens King precision steps off the green.

From Jacobsen, the company that brought you the Greens King, the first triplex precision greens mowers, comes the Trim King. Possibly the finest, most economical, formal cut triplex mower you'll ever own. Like the Greens King IV, the Trim King is compact and very light on the turf. With a cutting width of up to 70 inches. Like the Greens King IV, the Trim King is fully hydraulic for total control and ease of maintenance. Unlike any triplex mower you've ever ridden, the Trim King will give all your fine areas a clean carpet finish while providing the kind of dependability and engineering quality you've come to expect only from a Jacobsen.

Trim King Features

Out Front Mowing—Cuts ahead of the wheels to eliminate tracking.

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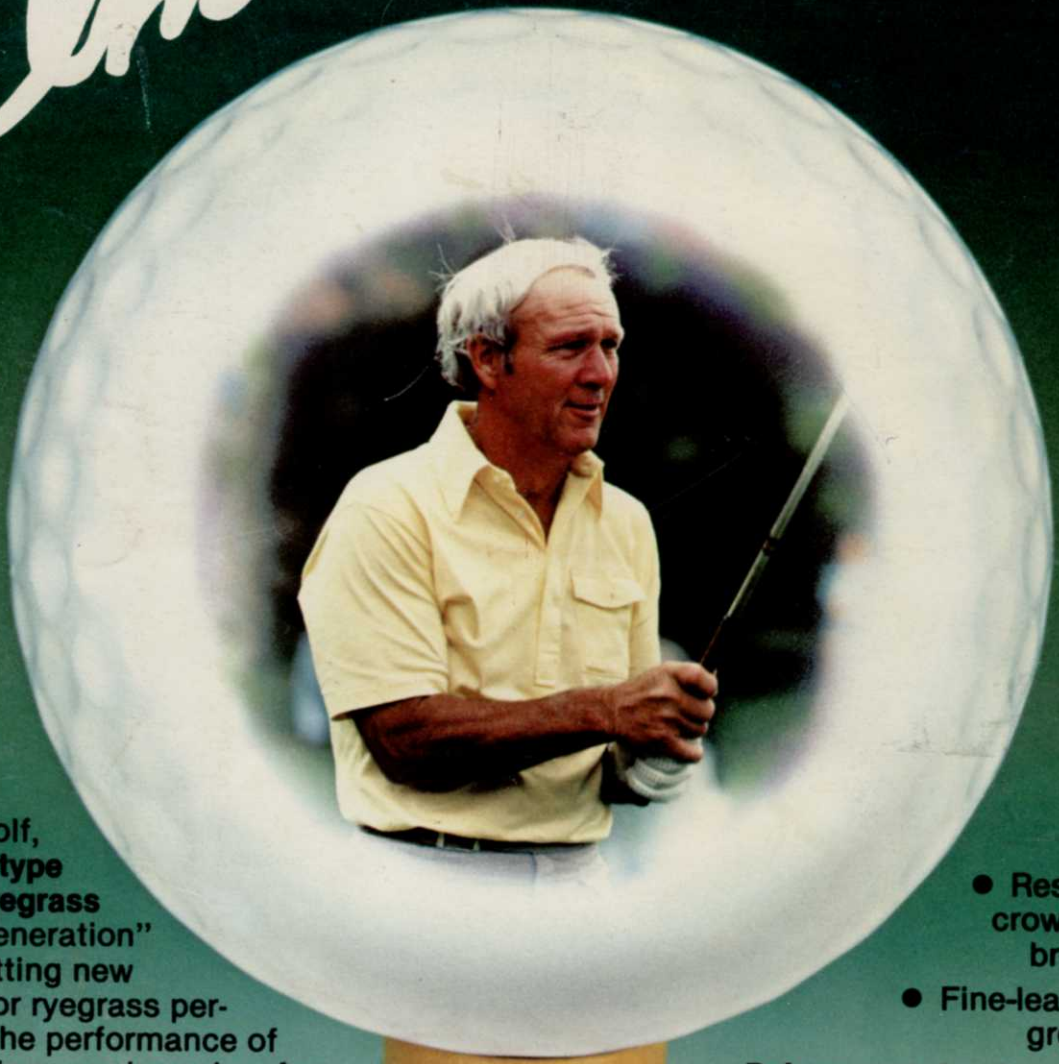
Palmer

Turf-Type Perennial Ryegrass

the beginning of a second legend



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